

**TEA POT DOMEWATER DISTRICT**  
**Water Management Plan**  
**2011 Criteria**

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## Section I: Description of the District

District Name: TEA POT DOME WATER DISTRICT

Contact Name: Keith Norris

Title: General Manager

Telephone: (559) 784-8641

E-mail: tpdwd@pvilleca.com

Web Address

### A. History

1. Date district formed: 9-21-54 Date of first Reclamation contract: 1957

Original size (acres): 2685.5 Current year (last complete calendar year): 2011

2. Current size, population, and irrigated acres

Size (acres)	
Population served (urban connections)	
Irrigated acres	3282

3. Water supplies received in current year

Water Source	AF
Federal urban water (Tbl 1)	
Federal agricultural water (Tbl 1)	8179
State water (Tbl 1)	
Other Wholesaler (define) (Tbl 1)	
Local surface water (Tbl 1)	
Upslope drain water (Tbl 1)	
District groundwater (Tbl 2)	
Banked water (Tbl 1)	
Transferred water (Tbl 1)	
Recycled water (Tbl 3)	
Other (define) (Tbl 1)	
Total	8179

4. Annual entitlement under each right and/or contract

	AF	Source	Contract #	Availability period(s)
Reclamation Urban AF/Y				
Reclamation Agriculture AF/Y	7500	USBR	14-06-200-7430D	March-January
Other AF/Y				

<i>Other AF/Y</i>				
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5. *Anticipated land-use changes. For Ag contractors, also include changes in irrigated acres.*

6. *Cropping patterns (Agricultural only)*

*List of current crops (crops with 5% or less of total acreage) can be combined in the 'Other' category.*

<i>Original Plan (enter date)</i>		<i>Previous Plan (2005)</i>		<i>Current Plan</i>	
<i>Crop Name</i>	<i>Acres</i>	<i>Crop Name</i>	<i>Acres</i>	<i>Crop Name</i>	<i>Acres</i>
Citrus	2672	Citrus	2997	Citrus	2997
Olives	245	Olives	245	Olives	245
<i>Other (&lt;5%)</i>	164	<i>Other (&lt;5%)</i>	40	<i>Other (&lt;5%)</i>	40
<i>Total</i>	3282	<i>Total</i>	3282	<i>Total</i>	3282

*(See Planner, Chapter 3, Addendum D for list of crop names)*

7. *Major irrigation methods (by acreage) (Agricultural only)*

<i>Original Plan (enter date)</i>		<i>Previous Plan (2005)</i>		<i>Current Plan</i>	
<i>Irrigation Method</i>	<i>Acres</i>	<i>Irrigation Method</i>	<i>Acres</i>	<i>Irrigation Method</i>	<i>Acres</i>
Level Basin		Level Basin		Level Basin	
Furrow	38	Furrow	38	Furrow	38
Sprinkler	1572	Sprinkler		Sprinkler	
Low-volume	1672	Low-volume	3244	Low-volume	3244
Multiple		Multiple		Multiple	
<i>Other</i>		<i>Other</i>		<i>Other</i>	
<i>Total</i>	3282	<i>Total</i>	3282	<i>Total</i>	3282

## B. Location and Facilities

See Attachment A for maps containing the following: incoming flow locations, turnouts (internal flow), and outflow (spill) points, conveyance system, storage facilities, operational loss recovery system, district wells and lift pumps, water quality monitoring locations, and groundwater facilities.

1. *Incoming flow locations and measurement methods*

<i>Location Name</i>	<i>Physical Location</i>	<i>Type of Measurement Device</i>	<i>Accuracy</i>
T1 pumping plant	Friant Kern Canal	Venturi Meter	+/-5%

2. *Current year Agricultural Conveyance System*

<i>Miles Unlined - Canal</i>	<i>Miles Lined - Canal</i>	<i>Miles Piped</i>	<i>Miles - Other</i>
		20	

3 *Current year Urban Distribution System*

<i>Miles AC Pipe</i>	<i>Miles Steel Pipe</i>	<i>Miles Cast Iron Pipe</i>	<i>Miles - Other</i>

4. *Storage facilities (tanks, reservoirs, regulating reservoirs)*

<i>Name</i>	<i>Type</i>	<i>Capacity (AF)</i>	<i>Distribution or Spill</i>
TPDWD Recharge Basin		60	

5. *Description of the agricultural spill recovery system and outflow points.*

None-completely piped system.

6. *Agricultural delivery system operation (check all that apply)*

<i>Scheduled</i>	<i>Rotation</i>	<i>Other (describe)</i>
X		

7. *Restrictions on water source(s)*

<i>Source</i>	<i>Restriction</i>	<i>Cause of Restriction</i>	<i>Effect on Operations</i>
Friant-Kern Canal	Watershed deficits	Lack of snowpack	Reductions in Class 1 deliveries

8. *Proposed changes or additions to facilities and operations for the next 5 years*

District completed construction of a Groundwater Storage and Conjunctive Management of Surface Water and Groundwater Project. New facilities are a 10-acre recharge basin, extraction well and delivery pipeline connecting to present distribution system. The purpose of the Project will be to divert CVP contract Class 1, Section 215 and RWA water supply for groundwater storage during wet years for extraction in dry years to meet the applied irrigation water requirements of the irrigated lands of the District.

## C. Topography and Soils

1. *Topography of the district and its impact on water operations and management*

Flat ground rising into the foot hill area on the eastern edge of the District. Generally loam soils, with rocky areas near the foot hill range. Good drainage of most soils.

2. *District soil association map (Agricultural only)*

See Attachment A, District Soils Map

3. *Agricultural limitations resulting from soil problems (Agricultural only)*

<i>Soil Problem</i>	<i>Estimated Acres</i>	<i>Effect on Water Operations and Management</i>
Salinity	0	
High-water table	0	
High or low infiltration rates	0	
Other (define)		

## D. Climate

1. *General climate of the district service area*

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Annual</i>
<i>Avg Precip.</i>	1.4	1.3	.92	.95	.47	.0	.01	.0	.06	.49	.77	1.9	8.45
<i>Avg Temp.</i>	44	48	54	52	68	73	79	76	71	56	50	45	59
<i>Max. Temp.</i>	55	63	68	72	75	81	95	93	89	71	65	56	73
<i>Min. Temp</i>	35	37	40	43	50	56	63	60	55	39	38	34	46
<i>ETo</i>	1.1	1.9	3.5	4.7	6.7	6.9	7.0	7.1	5.3	3.0	1.7	1.1	

*Weather station ID* Porterville \_\_\_\_\_ *Data period: Year* 2000 *to Year* 2011

*ET Station ID* #169 \_\_\_\_\_ *Average annual frost-free days:* 345 \_\_\_\_\_

2. *Impact of microclimates on water management within the service area*  
None

## E. Natural and Cultural Resources

1. *Natural resource areas within the service area*

<i>Name</i>	<i>Estimated Acres</i>	<i>Description</i>
None		

2. *Description of district management of these resources in the past or present*

3. *Recreational and/or cultural resources areas within the service area*

<i>Name</i>	<i>Estimated Acres</i>	<i>Description</i>
None		

## F. Operating Rules and Regulations

1. *Operating rules and regulations*

See Attachment B, District Rules and Regulations (water related)

2. *Water allocation policy (Agricultural only)*

See Attachment H,

Summary -

Water order form states yearly allotment of 2.15 acre-feet per acre of land owned in the District.

3. *Official and actual lead times necessary for water orders and shut-off (Agricultural only)*

See Attachment B, Page 1

Summary -

Water orders and shut-off must be given 24 hours in advance.

4. *Policies regarding return flows (surface and subsurface drainage from farms) and outflow (Agricultural only)*

Summary -

All landowners irrigation systems are sprinkler/fanjet, therefore there is no need for return systems,

5. *Policies on water transfers by the district and its customers*

-

Summary -

District has no in-District restrictions. No out of District transfers by individuals are allowed. The District follows USBR transfer policy when transferring to other Friant Districts.

## **G. Water Measurement, Pricing, and Billing**

1. *Agricultural Customers*

Refer to BMP A.1. Information on water measurement for agricultural contractors is completed under BMP A.1 on page 4-15.

2. *Urban Customers*

- a. *Total number of connections* \_\_\_\_\_ N/A
- b. *Total number of metered connections* \_\_\_\_\_ N/A
- c. *Total number of connections not billed by quantity* \_\_\_\_\_ N/A
- d. *Percentage of water that was measured at delivery point* N/A \_\_\_\_\_
- e. *Percentage of delivered water that was billed by quantity* N/A \_\_\_\_\_
- f. *Measurement device table*

<i>Meter Size and Type</i>	<i>Number</i>	<i>Accuracy* (+/-percentage)</i>	<i>Reading Frequency (Days)</i>	<i>Calibration Frequency (Months)</i>	<i>Maintenance Frequency (Months)</i>
5/8-3/4"					
1"					
1 1/2"					
2"					
3"					

4"					
6"					
8"					
10"					
Compound					
Turbo					
Other (define)					
Total					

\*Documentation verifying the accuracy of measurement devices must be submitted with Plan and included as Attachment C.

### 3. *Agricultural and Urban Rates*

#### a. *Current year agricultural and /or urban water charges - including rate structures and billing frequency*

See Attachment H Water Application Form,

The District requires a water application form filled out and returned with the first half payment of water ordered based on the maximum allotment of 2.15 acre-foot per acre of land owned by February 26 of the current water year. Water users meters are read monthly for 30 day billing cycles.

#### b. *Annual charges collected from agricultural customers*

<i>Fixed Charges</i>			
<i>Charges (\$ unit)</i>	<i>Charge units \$/acre, etc.</i>	<i>Units billed during year acres, etc.</i>	<i>\$ collected (\$ times units)</i>
\$31.23	acre	3,452	\$107,807.91

<i>Volumetric charges</i>			
<i>Charges (\$ unit)</i>	<i>Charge units \$/AF, etc.</i>	<i>Units billed during year AF, etc.</i>	<i>\$ collected (\$ times units)</i>
140.00	AF	4,409.58	\$617,341.20
115.00	AF	2,423.35	\$278,685.25

The District has a two tier pricing structure. Tier one (\$115.00) is approximately one third of the distribution system and is gravity flow. Tier two (\$140.00) is the remaining two thirds and is pressurized. Cost differential is due to operation and maintenance. Tier two water passes through two lift stations before being distributed to water users.

See Attachment D, District Sample Bill

*Annual charges collected from urban customers*

<i>Fixed Charges</i>			
<i>Charges (\$ unit)</i>	<i>Charge units (\$/meter size) etc.</i>	<i>Units billed during year (by meter size) etc.</i>	<i>\$ collected (\$ times units)</i>
N/A			

<i>Volumetric charges</i>			
<i>Charges (\$ unit)</i>	<i>Charge units (\$/HCF), etc.</i>	<i>Units billed during year HCF, Kgal, etc.</i>	<i>\$ collected (\$ times units)</i>
N/A			

*c. Describe the contractor's record management system*

The District uses Peachtree Premium Accounting program for its monthly billing and record management system. Water usage is recorded on a monthly basis. Beginning readings and ending readings are the basis for the water billing. Records are available for meter use, by meter and are available at the District office.

## **H. Water Shortage Allocation Policies**

*1. Current year water shortage policies or shortage response plan - specifying how reduced water supplies are allocated*

See Attachment B, page (2),

*2. Current year policies that address wasteful use of water and enforcement methods*

See Attachment B, page (1)

## **I. Evaluate Policies of Regulatory Agencies Affecting the Contractor and Identify Policies that Inhibit Good Water Management.**

N/A

## Section II: Inventory of Water Resources

### A. Surface Water Supply

1. *Surface water supplies in acre feet, imported and originating within the service area, by month (Table 1).*

See Chapter 5, Water Inventory Tables, Table 1

2. *Amount of water delivered to the district by each of the district sources for the last 10 years*

See Chapter 5, Water Inventory Tables, Table 8.

### B. Groundwater Supply

1. *Groundwater extracted by the district and delivered, by month (Table 2)*

See Chapter 5, Water Inventory Tables, Table 2

2. *Groundwater basin(s) that underlies the service area*

<i>Name</i>	<i>Size (Square Miles)</i>	<i>Usable Capacity (AF)</i>	<i>Safe Yield (AF/Y)</i>
DAV 243	425,510	1,880,000	15200 (1)

3. *Map of district-operated wells and managed groundwater recharge areas*

See Attachment A, for District Map of Groundwater Facilities

4. *Description of conjunctive use of surface and groundwater*

-

Groundwater is extracted only during years of below normal hydrologic conditions wherein the effective precipitation and District's contractual Class 1 surface water supply flows are diminished below the irrigation water requirements of the crops within the service area of the District.

5. *Groundwater Management Plan*

See Attachment E, Groundwater Management Plan

6. *Groundwater Banking Plan*

See Attachment F, Groundwater Banking Plan

### C. Other Water Supplies

1. *"Other" water used as part of the water supply – Describe supply*

See Chapter 5, Water Inventory Tables, Table 1

### D. Source Water Quality Monitoring Practices

1. *Potable Water Quality (Urban only)*

2. *Agricultural water quality concerns:*      Yes      \_\_\_\_\_      No          X      
(If yes, describe)

3. *Description of the agricultural water quality testing program and the role of each participant, including the district, in the program*

Water is sampled by the Friant Water Authority once per irrigation season. Water quality report is attached in Attachment J.

4. *Current water quality monitoring programs for surface water by source (Agricultural only)*

<i>Analyses Performed</i>	<i>Frequency</i>	<i>Concentration Range</i>	<i>Average</i>
Ag-acceptable	Yearly		

*Current water quality monitoring programs for groundwater by source (Agricultural only)*

<i>Analyses Performed</i>	<i>Frequency</i>	<i>Concentration Range</i>	<i>Average</i>
No analysis taken			

## E. Water Uses within the District

1. *Agricultural*

*See Chapter 5, Water Inventory Tables, Table 5 - Crop Water Needs*

2. *Types of irrigation systems used for each crop in current year*

<i>Crop name</i>	<i>Total Acres</i>	<i>Level Basin - acres</i>	<i>Furrow - acres</i>	<i>Sprinkler - acres</i>	<i>Low Volume - acres</i>	<i>Multiple methods - acres</i>
Citrus	2973		38		2973	
Olives	245				245	
Pistachios	26				26	
TOTAL						

3. *Urban use by customer type in current year* N/A

<i>Customer Type</i>	<i>Number of Connections</i>	<i>AF</i>
<i>Single-family</i>		
<i>Multi-family</i>		
<i>Commercial</i>		
<i>Industrial</i>		
<i>Institutional</i>		
<i>Landscape irrigation</i>		
<i>Wholesale</i>		
<i>Recycled</i>		
<i>Other (specify)</i>		
<i>Other (specify)</i>		
<i>Other (specify)</i>		
<i>Unaccounted for</i>		
<b>Total</b>		

4. *Urban Wastewater Collection/Treatment Systems serving the service area*

<i>Treatment Plant</i>	<i>Treatment Level (1, 2, 3)</i>	<i>AF</i>	<i>Disposal to / uses</i>
N/A			
	<b>Total</b>		
<b>Total discharged to ocean and/or saline sink</b>			

5. *Groundwater recharge in current year (Table 6)*

<i>Recharge Area</i>	<i>Method of Recharge</i>	<i>AF</i>	<i>Method of Retrieval</i>
TPDWD Basin	percolation	362	Extraction Well
	<b>Total</b>	<b>362</b>	

6a. *Transfers and exchanges into the service area in current year – (Table 1)*

<i>From Whom</i>	<i>To Whom</i>	<i>AF</i>	<i>Use</i>
None			
	<b>Total</b>		

6b. *Transfers and exchanges out of the service area in current year – (Table 6)*

<i>From Whom</i>	<i>To Whom</i>	<i>AF</i>	<i>Use</i>
Tea Pot Dome WD	Saucelito ID	2000	Ag irrigation
	<b>Total</b>	<b>2000</b>	

7. *Wheeling, or other transactions in and out of the district boundaries – (Table 6)*

<i>From Whom</i>	<i>To Whom</i>	<i>AF</i>	<i>Use</i>
None			
	Total		

8. *Other uses of water*

<i>Other Uses</i>	<i>AF</i>

**F. Outflow from the District (Agricultural only)**

See Facilities Map, Attachment A, for the location of surface and subsurface outflow points, outflow measurement points, outflow water-quality testing locations

1. *Surface and subsurface drain/outflow*

<i>Outflow point</i>	<i>Location description</i>	<i>AF</i>	<i>Type of measurement</i>	<i>Accuracy (%)</i>	<i>% of total outflow</i>	<i>Acres drained</i>
	N/A					

<i>Outflow point</i>	<i>Where the outflow goes (drain, river or other location)</i>	<i>Type Reuse (if known)</i>
	N/A	

2. *Description of the Outflow (surface and subsurface) water quality testing program and the role of each participant in the program*

3. *Outflow (surface drainage & spill) Quality Testing Program*

<i>Analyses Performed</i>	<i>Frequency</i>	<i>Concentration Range</i>	<i>Average</i>	<i>Reuse limitation?</i>
N/A				

*Outflow (subsurface drainage) Quality Testing Program*

<i>Analyses Performed</i>	<i>Frequency</i>	<i>Concentration Range</i>	<i>Average</i>	<i>Reuse limitation?</i>
N/A				

4. Provide a brief discussion of the District's involvement in Central Valley Regional Water Quality Control Board programs or requirements for remediating or monitoring any contaminants that would significantly degrade water quality in the receiving surface waters.

Due to resolution RS-2003-0105: Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands within the Central Valley Southern San Joaquin Valley Water Quality Coalition (SSJWQC) was formed. The SSJWQC is comprised of the Kings, Kaweah, Tule and Kern sub-watersheds. Tea Pot Dome WD is located in the Tule Sub-watershed and is a participant in the Monitoring and Reporting Program required by resolution R5-2003-0105.

**G. Water Accounting (Inventory)**

Go To Chapter 5 for Agricultural Water Inventory Tables and Instructions.

Go To Chapter 6 for Urban Water Inventory Tables and Instructions.

### Section III: Best Management Practices (BMPs) for Agricultural Contractors

#### A. Critical Agricultural BMPs

1. Measure the volume of water delivered by the district to each turnout with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6%

- a. Number of delivery points (turnouts and connections) 125 \_\_\_\_\_
- b. Number of delivery points serving more than one farm 0 \_\_\_\_\_
- c. Number of measured delivery points (meters and measurement devices) \_\_\_\_\_ 125
- d. Percentage of delivered water that was measured at a delivery point \_\_\_\_\_ 100%
- e. Total number of delivery points not billed by quantity \_\_\_\_\_ 0
- f. Delivery point measurement device table

Measurement Type	Number	Accuracy* (+/- %)	Reading Frequency (Days)	Calibration Frequency (Months)	Maintenance Frequency (Months)
Orifices					
Propeller meter	125	+/-2%	30	See note below	2
Weirs					
Flumes					
Venturi					
Metered gates					
Acoustic doppler					
Other (define)					
Total	125				

\*Documentation verifying the accuracy of measurement devices must be submitted with Plan and included in Attachment C.

The District monitors water user meters on a daily basis for accuracy per irrigational run. If a meter is found to be inaccurate it is removed for repair and calibrated.(see meter monitoring attachment C)

2. Designate a water conservation coordinator to develop and implement the Plan and develop progress reports

Name: Keith Norris Title: General Manager \_\_\_\_\_

Address: 105 W. Teapot Dome Ave. Porterville, CA 93257

Telephone: (559) 784-8641 \_\_\_\_\_ E-mail: tpdwd@pvilleca.com

Provide the job description and minimum qualifications

The District Manager is responsible for the coordination, implementation and developing of progress reports.

3. *Provide or support the availability of water management services to water users*  
See Attachment G, Notices of District Education Programs and Services Available to Customers.

**a. On-Farm Evaluations**

1) On farm irrigation and drainage system evaluations using a mobile lab type assessment

	<i>Total in district</i>	<i># surveyed last year</i>	<i># surveyed in current year</i>	<i># projected for next year</i>	<i># projected 2<sup>nd</sup> yr in future</i>
<i>Irrigated acres</i>	3285	0	30	60	60
<i>Number of farms</i>	65	0	1	2	2

The District plans to increase the awareness of the On-Farm Evaluations program through direct mail and contact from District Management. The District Board approved financial support for the North Kern Resource Conservation District Mobile Irrigation Lab, which will ensure the availability of the On-Farm Evaluations.

2) Timely field and crop-specific water delivery information to the water user

Monthly water usage is computed through the District's accounts billing program. All water users bills shows the current and past months usage by acre-foot. Year to date totals and crop specific information are available through the District office upon request.

**b. Real-time and normal irrigation scheduling and crop ET information**

All District water users receive a monthly subscription to the Friant Waterline which has periodic inserts with irrigation and crop ET information. The District also provides CIMIS Eto data and crop coefficients upon request. The District is able to provide this information to its growers thanks to the Friant Water Authority which issues a weekly reproduction of crop coefficients and CIMIS evapotranspiration rates which are compiled by the Kings River Conservation District. Information provided for each crop includes crop water use for the past 7 days, predicted water use for the next 7 days, total crop water use season to date and the CIMIS evapotranspiration rates table lists data for twelve 12 CIMIS stations located within the Friant Division, CVP service area.

The District is developing a news letter which will list agencies and services available to landowner/grower which will provide crop specific ET data based on real time. Examples; Department of Water Resources (DWR) provides CIMIS data free; U.S Weather Service provides CIMIS ET data and forecasts on their local weather channels.

**c. Surface, ground, and drainage water quantity and quality data provided to water users**

Surface water quality analysis is attached as Attachment J.

Quantity data is available at [www.friantwater.org/watersupply](http://www.friantwater.org/watersupply). This site informs Districts of official changes throughout the spring months on any possible changes in the allocation from Friant Dam.

***d. Agricultural water management educational programs and materials for farmers, staff, and the public***

<i>Program</i>	<i>Co-Funders (If Any)</i>	<i>Yearly Targets</i>
Water Education Foundation	TPDWD financial support	All users
Friant Waterline	Friant Water Authority-TPDWD member	All users

See Attachment H for samples of provided materials and notices

***e. other***

The District is a member of the California Water Awareness Campaign which provides the public with practical information and personal connections that help ensure California a plentiful water supply. The District provides financial support for California Water Coalition whose goal is to increase public awareness of agriculture use of water.

***4. Pricing structure - based at least in part on quantity delivered***

All water delivered to growers is based on quantity delivered. Every turnout is metered.

5. *Evaluate and improve efficiencies of district pumps*

Describe the program to evaluate and improve the efficiencies of the contractor's pumps. The District performs efficiency tests generally every 5 years. Any recommended upgrades are completed at that time. Management also monitors KW hours for comparable historic use. Any increase of KW hours may mean lower efficiency.

	<i>Total in district</i>	<i># surveyed last year</i>	<i># surveyed in current year</i>	<i># projected for next year</i>
<i>Wells</i>	2	0	0	1
<i>Lift pumps</i>	10	0	0	5

## B. Exemptible BMPs for Agricultural Contractors

(See Planner, Chapter 2, Addendum B for examples of exemptible conditions)

### 1. Facilitate alternative land use

<i>Drainage Characteristic</i>	<i>Acreage</i>	<i>Potential Alternate Uses</i>
<i>High water table (&lt;5 feet)</i>		N/A
<i>Poor drainage</i>		
<i>Groundwater Selenium concentration &gt; 50 ppb</i>		
<i>Poor productivity</i>		

Describe how the contractor encourages customers to participate in these programs.

### 2. Facilitate use of available recycled urban wastewater

<i>Sources of Recycled Urban Waste Water</i>	<i>AF/Y Available</i>	<i>AF/Y Currently Used in District</i>
None available		

### 3. Facilitate the financing of capital improvements for on-farm irrigation systems

<i>Program</i>	<i>Description</i>
See note below	

Water users are notified of financing programs available through the Friant Waterline. The District is developing a news letter for distribution to all water users containing information for grants available to improve irrigation system.

### 4. Incentive pricing

The incentive for growers to use district supply is due to the lack of sufficient groundwater supply. Two thirds of the District is located in an area where the wells are of minimal depth and are of low volume pumping capacity, therefore the growers are unable to meet their crop irrigational demands.

### 5. a) Line or pipe ditches and canals

<i>Canal/Lateral (Reach)</i>	<i>Type of Improvement</i>	<i>Number of Miles in Reach</i>	<i>Estimated Seepage (AF/Y)</i>	<i>Accomplished/Planned Date</i>
System is buried pipeline				

### b) Construct/line regulatory reservoirs

<i>Reservoir Name</i>	<i>Location</i>	<i>Describe improved operational flexibility and AF savings</i>
-----------------------	-----------------	---

No plans to construct, regulated from headworks of the Friant-Kern Canal.		

6. *Increase flexibility in water ordering by, and delivery to, water users*

See Attachment B, District Rules and Regulations Rule 4

The District maintains a scheduled demand system with a 24-hour notice before delivery and shut off. Water users are allowed to turn on and shut off between 6:30 A.M. and 3:00 P.M.

Special requests are available by contacting District Manager or the water tender.

7. *Construct and operate district spill and tailwater recovery systems*

<i>Distribution System Lateral</i>	<i>Annual Spill (AF/Y)</i>	<i>Quantity Recovered and reused (AF/Y)</i>
No spill/tailwater		
Total		

<i>Drainage System Lateral</i>	<i>Annual Drainage Outflow (AF/Y)</i>	<i>Quantity Recovered and reused (AF/Y)</i>
Total		

Describe facilities that resulted in reduced spill and tailwater

8. *Plan to measure outflow.*

Total # of outflow (surface) locations/points N/A

Total # of outflow (subsurface) locations/points N/A

Total # of measured outflow points                     

Percentage of total outflow (volume) measured during report year                     

*Identify locations, prioritize, determine best measurement method/cost, submit funding proposal*

<i>Location &amp; Priority</i>	<i>Estimated cost (in \$1,000s)</i>				
	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>	<i>Year 5</i>

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9. *Optimize conjunctive use of surface and groundwater*

District has two supplemental wells. These wells are only used when the District's contractual Class 1 supply flows are diminished below the irrigation water requirements of the crops within the service area of the district.

10. *Automate distribution and/or drainage system structure*

All structures from the source supply are automated.

11. *Facilitate or promote water customer pump testing and evaluation*

The District and its water users utilize the free pump testing program offered by Southern California Edison (SCE). SCE promotes their program through periodic inserts in their monthly billings. The District will seek private companies offering pump testing upon request.

12. *Mapping*

GIS maps	Estimated cost (in \$1,000s)				
	Year 1	Year 2	Year 3	Year 5	Year 6
Layer 1 – Distribution system					
Layer 2 – Drainage system		\$1.9			
Suggested layers:					
Layer 3 – Groundwater information			\$.03		
Layer 4 – Soils map			\$.03		
Layer 5 – Natural & cultural resources				\$.07	
Layer 6 – Problem areas					\$.09

**C. Provide a 3-Year Budget for Implementing BMPs**

1. *Amount actually spent during current year.*

Year <u>2012</u> or <u>Year 1</u>		Actual Expenditure	
BMP #	BMP Name	(not including staff time)	Staff Hours
A 1	Measurement	\$5500	20
2	Conservation staff	\$3500	250
3	On-farm evaluation /water delivery info	\$1000	10
	Irrigation Scheduling	\$0	0
	Water quality	\$0	0
	Agricultural Education Program	\$850	5
4	Quantity pricing	\$0	0
5	Contractor's pumps	\$0	5

B	1	Alternative land use	\$0	0
	2	Urban recycled water use	N/A	0
	3	Financing of on-farm improvements	\$0	0
	4	Incentive pricing	\$0	0
	5	Line or pipe canals/install reservoirs	N/A	0
	6	Increase delivery flexibility		0
	7	District spill/tailwater recovery systems	N/A	0
	8	Measure outflow	\$0	0
	9	Optimize conjunctive use	\$	
	10	Automate canal structures	N/A	0
	11	Customer pump testing	\$0	0
	12	Mapping	\$0	0
		<i>Total</i>	<i>\$10,850</i>	<i>280</i>

2. Projected budget summary for the next year.

Year <u>2013</u> or <u>Year 2</u>		Budgeted Expenditure (not including staff time)		Staff Hours
BMP #	BMP Name			
A	1 Measurement	\$6000		22
	2 Conservation staff	\$3500		250
	3 On-farm evaluations/water delivery info	\$1000		10
	Irrigation Scheduling	\$0		0
	Water quality	\$0		0
	Agricultural Education Program	\$900		5
	4 Quantity pricing	\$0		0
	5 Contractor's pumps	\$0		10
B	1 Alternative land use	\$0		0
	2 Urban recycled water use	N/A		0
	3 Financing of on-farm improvements	\$0		0
	4 Incentive pricing	\$0		0
	5 Line or pipe canals/install reservoirs	N/A		0
	6 Increase delivery flexibility			0
	7 District spill/tailwater recovery systems	N/A		0
	8 Measure outflow	N/A		0
	9 Optimize conjunctive use	\$3000		75
	10 Automate canal structures	N/A		0
	11 Customer pump testing	\$0		0
	12 Mapping	\$500		0
	<i>Total</i>	<i>\$14,900</i>		<i>357</i>

3. Projected budget summary for 3<sup>rd</sup> year.

Year <u>2014</u> or <u>Year 3</u>		Budgeted Expenditure (not including staff time)		Staff Hours
BMP #	BMP Name			
A	1 Measurement	\$6000		25
	2 Conservation staff	\$3500		275
	3 On-farm evaluations/water delivery info	\$1000		10
	Irrigation Scheduling	\$0		0
	Water quality	\$0		0

	<i>Agricultural Education Program</i>	\$900	10
4	<i>Quantity pricing</i>	\$0	0
5	<i>Contractor's pumps</i>	\$0	0
B	<i>1 Alternative land use</i>	\$0	0
	<i>2 Urban recycled water use</i>	N/A	0
	<i>3 Financing of on-farm improvements</i>	\$0	0
	<i>4 Incentive pricing</i>	N/A	0
	<i>5 Line or pipe canals/install reservoirs</i>	NA	0
	<i>6 Increase delivery flexibility</i>	\$0	0
	<i>7 District spill/tailwater recovery systems</i>	N/A	0
	<i>8 Measure outflow</i>	N/a	0
	<i>9 Optimize conjunctive use</i>	\$3000	75
	<i>10 Automate canal structures</i>	\$0	0
	<i>11 Customer pump testing</i>	\$0	0
	<i>12 Mapping</i>	\$900	0
	<i>Total</i>	\$15,300	415

Year of Data  Enter data year here

**Table 1**

***Surface Water Supply***

<b>2011 Month</b>	<b>Federal Ag Water (acre-feet)</b>	<b>Federal non- Ag Water. (acre-feet)</b>	<b>State Water (acre-feet)</b>	<b>Local Water (define) (acre-feet)</b>	<b>Other Water (acre-feet)</b>	<b>Transfers into District (acre-feet)</b>	<b>Upslope Drain Water (acre-feet)</b>	<b>Total (acre-feet)</b>
<b>Method</b>								
January	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0
March	71	0	0	0	0	0	0	71
April	230	0	0	0	0	0	0	230
May	637	0	0	0	0	0	0	637
June	975	0	0	0	0	0	0	975
July	1151	0	0	0	0	0	0	1,151
August	1135	0	0	0	0	0	0	1,135
September	3042	0	0	0	0	0	0	3,042
October	535	0	0	0	0	0	0	535
November	160	0	0	0	0	0	0	160
December	243	0	0	0	0	0	0	243
<b>TOTAL</b>	<b>8,179</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8,179</b>

**Table 2**

***Ground Water Supply***

<b>2011 Month</b>	<b>District Groundwater (acre-feet)</b>	<b>Private Agric *(acre-feet)</b>
<b>Method</b>		
January	0	0
February	0	0
March	0	75
April	0	100
May	0	125
June	0	175
July	0	220
August	0	200
September	0	180
October	0	85
November	0	65
December	0	0
TOTAL	0	1,225

\*normally estimated

**Table 3**

***Total Water Supply***

<b>2011 Month</b>	<b>Surface Water Total (acre-feet)</b>	<b>District Groundwater (acre-feet)</b>	<b>Recycled M&amp;I (acre-feet)</b>	<b>Total District (acre-feet)</b>
<b>Method</b>				
January	0	0	0	0
February	0	0	0	0
March	71	0	0	71
April	230	0	0	230
May	637	0	0	637
June	975	0	0	975
July	1,151	0	0	1,151
August	1,135	0	0	1,135
September	3,042	0	0	3,042
October	535	0	0	535
November	160	0	0	160
December	243	0	0	243
<b>TOTAL</b>	<b>8,179</b>	<b>0</b>	<b>0</b>	<b>8,179</b>

\*Recycled M&I Wastewater is treated urban wastewater that is used for agriculture.

2011 Precipitation Worksheet					2011 Evaporation Worksheet			
	inches precip	ft precip	acres	AF/Year		inches evap	ft evap	acres
Jan	1.98	0.17	0.00	0.00	Jan	0.80	0.07	0.00
Feb	0.22	0.02	0.00	0.00	Feb	2.19	0.18	0.00
Mar	3.09	0.26	0.00	0.00	Mar	2.89	0.24	0.00
Apr	0.60	0.05	0.00	0.00	Apr	4.93	0.41	0.00
May	0.70	0.06	0.00	0.00	May	6.47	0.54	0.00
Jun	0.20	0.02	0.00	0.00	Jun	7.53	0.63	0.00
Jul	0.00	0.00	0.00	0.00	Jul	7.98	0.67	0.00
Aug	0.00	0.00	0.00	0.00	Aug	7.31	0.61	0.00
Sept	0.00	0.00	0.00	0.00	Sept	5.41	0.45	0.00
Oct	0.39	0.03	0.00	0.00	Oct	3.34	0.28	0.00
Nov	0.80	0.07	0.00	0.00	Nov	1.49	0.12	0.00
Dec	0.00	0.00			Dec	1.50	0.13	
<b>TOTAL</b>	<b>7.98</b>	<b>0.67</b>			<b>TOTAL</b>	<b>51.84</b>	<b>4.32</b>	

**Table 4*****Agricultural Distribution System***

2011								
Canal, Pipeline, Lateral, Reservoir	Length (feet)	Width (feet)	Surface Area (square feet)	Precipitatio (acre-feet)	Evaporation (acre-feet)	Spillage (acre-feet)	Seepage (acre-feet)	Total (acre-feet)
	116,160	0	0	0.0	0.0	0	23	(23)
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
TOTAL				0.0	0.0	0	23	(23)

The District accounts for a 2% loss for every 100 feet of pipe.

**Table 5**

***Crop Water Needs***

<b>2011 Crop Name</b>	<b>Area (crop acres)</b>	<b>Crop ET (AF/Ac)</b>	<b>Leaching Requiremen (AF/Ac)</b>	<b>Cultural Practices (AF/Ac)</b>	<b>Effective Precipitatio (AF/Ac)</b>	<b>Appl. Crop Water Use (acre-feet)</b>
Citrus	2,973	2.75	0.0	0.0	0.3	7,284
Olives	245	2.45	0.0	0.0	0.3	527
Nuts	47	3.50	0.0	0.0	0.1	160
Pasture	17	4.10	0.0	0.0	0.1	68
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
	0	0.00	0.0	0.0	0.0	0
Crop Acres	3,282					8,038

Total Irrig. Acres 3,282 (If this number is larger than your known total, it may be due to double cropping)

**Table 6****2011 District Water Inventory**

Water Supply	Table 3		8,179
Riparian ET	(Distribution and Drain)	minus	0
Groundwater recharge	intentional - ponds, injection	minus	362
Seepage	Table 4	minus	23
Evaporation - Precipitation	Table 4	minus	0
Spillage	Table 4	minus	0
Transfers out of District		minus	2,000
Water Available for sale to customers			5,794
Actual Agricultural Water Sales 2011	From District Sales Records		5,817
Private Groundwater	Table 2	plus	1,225
Crop Water Needs	Table 5	minus	8,038
Drainwater outflow	(tail and tile, not recycled)	minus	0
Percolation from Agricultural Land	(calculated)		(996)
Unaccounted for Water	(calculated)		(23)

**Table 7**

***Influence on Groundwater and Saline Sink***

**2011**

Agric Land Deep Perc + Seepage + Recharge - Groundwater Pumping = District Influence	385
Estimated actual change in ground water storage, including natural recharge)	0
Irrigated Acres (from Table 5)	3,282
Irrigated acres over a perched water table	0
Irrigated acres draining to a saline sink	0
Portion of percolation from agri seeping to a perched water table	0
Portion of percolation from agri seeping to a saline sink	0
Portion of On-Farm Drain water flowing to a perched water table/saline sink	0
Portion of Dist. Sys. seep/leaks/spills to perched water table/saline sink	0
Total (AF) flowing to a perched water table and saline sink	0

**Table 8*****Annual Water Quantities Delivered Under Each Right or Contract***

<b>Year</b>	<b>Federal Ag Water (acre-feet)</b>	<b>Federal non- Ag Water. (acre-feet)</b>	<b>State Water (acre-feet)</b>	<b>Local Water (define) (acre-feet)</b>	<b>Other Water (acre-feet)</b>	<b>Transfers into District (acre-feet)</b>	<b>Upslope Drain Water (acre-feet)</b>	<b>Total (acre-feet)</b>
2002	6,265	0	0	0	0	0	0	6,265
2003	5,462	0	0	0	0	0	0	5,462
2004	5,076	0	0	0	0	0	0	5,076
2005	5,881	0	0	0	0	0	0	5,881
2006	6,456	0	0	0	0	0	0	6,456
2007	5,003	0	0	0	0	0	0	5,003
2008	7,000	0	0	0	0	0	0	7,000
2009	6,009	0	0	0	0	0	0	6,009
2010	5,944	0	0	0	0	0	0	5,944
2011	8,179	0	0	0	0	0	0	8,179
Total	61,275	0	0	0	0	0	0	61,275
Average	6,128	0	0	0	0	0	0	6,128

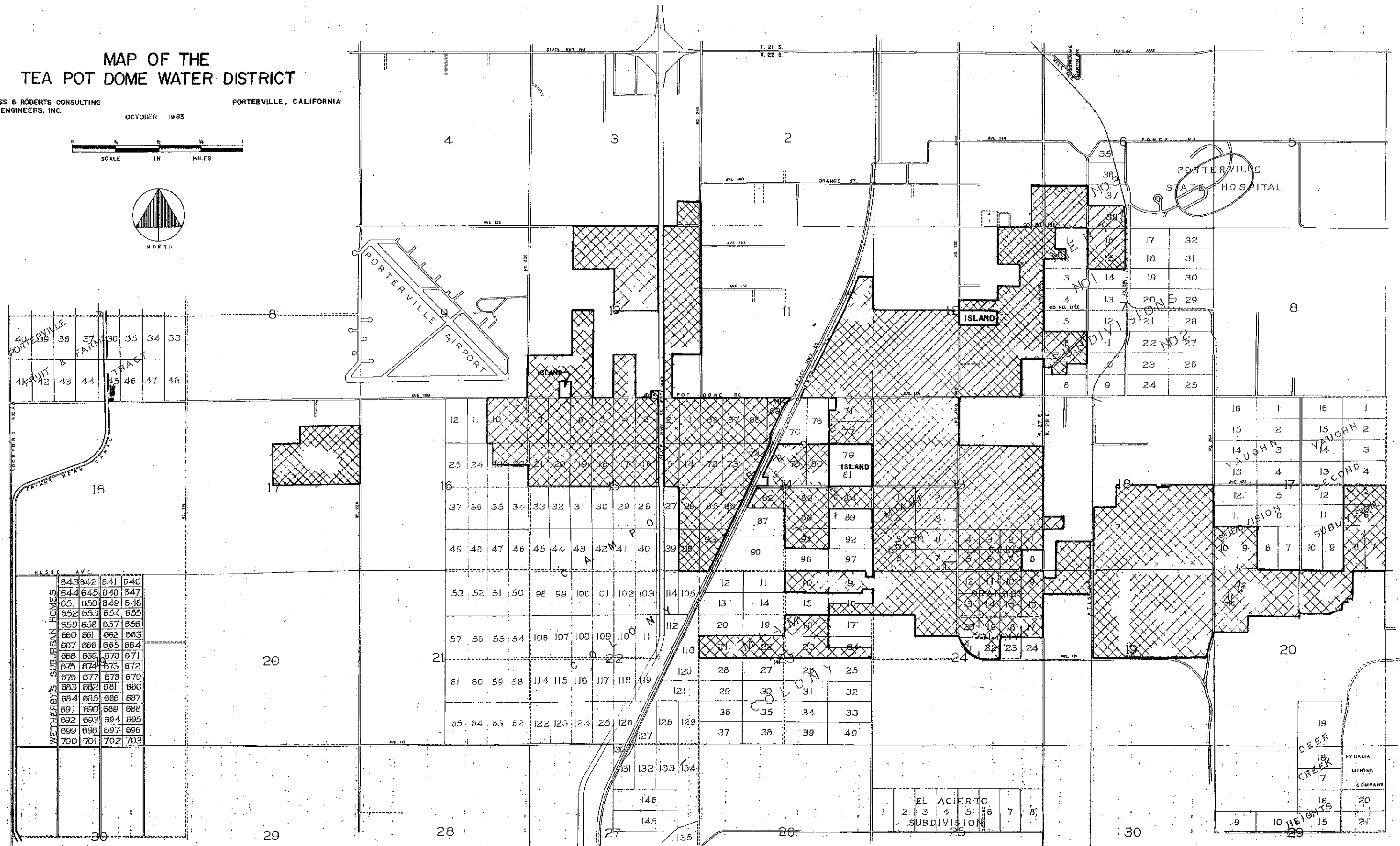
**ATTACHMENT A**  
**District Maps**

# MAP OF THE TEA POT DOME WATER DISTRICT

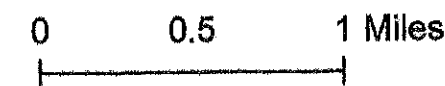
STRAUSS & ROBERTS CONSULTING  
CIVIL ENGINEERS, INC.

PORTERVILLE, CALIFORNIA

OCTOBER 1983

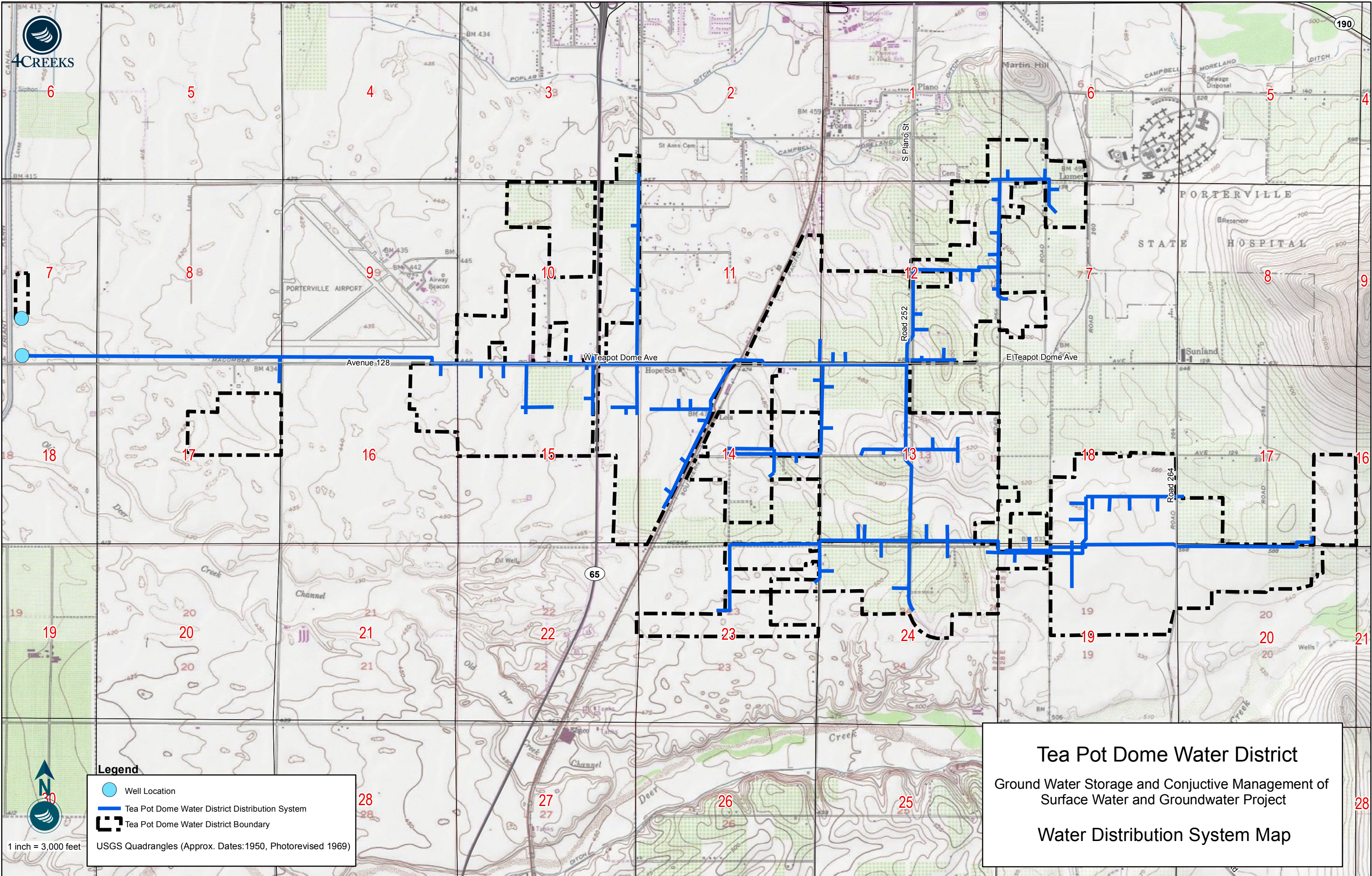


☐ Tea Pot Dome W.D. (Incorporated Boundary)



Date: March 1, 2008  
 Author: seryslan  
 SCCAO GIS  
 Path Name: K:\apimenter\projects\David Woolley\Soils Map\keapot\_dome.mxd

Tea Pot Dome ID Soil Survey Tulare County, Central Portion			
Map Unit	Count	Sum Acres	Soils Name
109	5	157.93	CENTERVILLE CLAY, 0 TO 2 PERCENT SLOPES
110	3	1725.45	CENTERVILLE CLAY, 2 TO 9 PERCENT SLOPES
124	1	14.96	EXETER LOAM, 0 TO 2 PERCENT SLOPES
125	5	74.05	EXETER LOAM, 2 TO 9 PERCENT SLOPES
134	1	125.45	HAVALA LOAM, 0 TO 2 PERCENT SLOPES
135	2	19.30	HAVALA LOAM, 2 TO 5 PERCENT SLOPES
147	3	82.48	PORTERVILLE CLAY, 0 TO 2 PERCENT SLOPES
148	2	90.10	PORTERVILLE CLAY, 2 TO 9 PERCENT SLOPES
154	2	922.47	SAN JOAQUIN LOAM, 0 TO 2 PERCENT SLOPES
155	10	193.67	SAN JOAQUIN LOAM, 2 TO 9 PERCENT SLOPES
164	1	0.21	TUJUNGA SAND
Tea Pot Dome ID Soil Survey Tulare County, Western Portion			
Map Unit	Count	Sum Acres	Soils Name
114	1	97.30	EXETER LOAM, 0 TO 2 PERCENT SLOPES
135	2	77.25	SAN JOAQUIN LOAM, 0 TO 2 PERCENT SLOPES



**ATTACHMENT B**  
**District Rules and Regulations**

TEA POT DOME WATER DISTRICT  
105 WEST TEA POT DOME AVENUE  
PORTERVILLE, CALIFORNIA 93257  
(559) 784-8641

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RULES AND REGULATIONS FOR WATER SERVICE FOR THE 2013-2014 SEASON

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1. Application for water must be filed on or before February 26, 2013. Any orders for water placed after that time will be accepted only on the condition that the District can accept such orders and deliver such water.
2. Water payments are to be made as follows: The first half of the water order for 2013 must be paid for on or before February 26, 2013. The second half of the water order must be paid for on or before June 26, 2013.
3. All daily water orders and requests for water to be turned on and off must be verified at the District Office. Phone (559) 784-8641.
4. Water users should arrange to make changes in quantity of water being used **only between 6:30 A.M. and 3:00 P.M.** **Water deliveries shall be ordered on the basis of a uniform continuous flow of not less than twenty-four hours duration.** This will facilitate operations in connection with the Friant-Kern Canal.
5. Due to the regulations under which the District works with the Friant Water Authority, water orders must be given at least one day prior to time when the changes are to be made. Orders to change water **Must be received by Keith Norris or Marco Serrato between 7:00 A.M. and 9:00 A.M., Monday through Saturday for the water changes to be made on the following day.** However, orders for water changes to be made on Monday **Must** be received by 9:00 A.M. the Saturday before.
6. Measurement of water will be made at the outlet serving the property. All water transported beyond that point must be provided by the user.
7. Water users owning the property being served should file their own water order. However, where landowners are leasing their property, **the owner must sign the Lessees application for water, unless payment in full is made when the order is placed.**
8. Water orders should be placed on the basis of best estimate of yearly use. Orders above the 2.15 A.F. per acre will need District approval.
9. The District will use its utmost power to meet emergency conditions which may arise.
10. **WASTEFUL USE OF WATER**  
The District's water service contract with the USBR requires a water conservation plan which has a provision requiring regulating wasteful use of water. If the District determines that a landowner has improperly used irrigation water delivered to them, such that excessive runoff, in the District's opinion, is leaving the landowner's property, the District shall notify the landowner of the appropriate steps to take to eliminate the problem. If the landowner does not correct the problem, the District will discontinue water delivery until the problem is rectified.

11. **WATER SHORTAGE**

If the District's water supply, from the Friant-Kern Canal, is declared below 100% of the 7,500 acre-feet contract amount the following procedures will be implemented.

Management will assess the District's supply situation. Compare current supply with historic average demands. Then evaluate a course of action to meet the demands, such as purchase water from outside source, turn on supplemental wells. After analysis has been completed water supply will be prorated to irrigable lands of the District.

Example: 5,500 acre-feet divided by 3,282 acres = 1.67 acre-feet per acre

12. In accordance with California Water Code Section 35423, the District shall not deliver water to (1) persons who violate these Rules and Regulations, or (2) Persons against whom there are delinquent water or other charges, and/or delinquent Assessments of more than sixty days. In cases where property is being leased, the District shall not deliver water to said property if any delinquencies exist against the Landowner.
13. There will be a \$25 charge, plus bank fees on all returned checks.

**ATTACHMENT C**  
**Measurement Device Documentation**

## **Meter Monitoring and Maintenance**

### **Monitoring**

The District monitors meter start ups on a daily basis. Water tender makes a list of all meter turnouts scheduled for delivery start up. Once the grower has turned on his system the water tender will time the meter using the sweep dial and a stop watch to determine the flow. The District uses inches minors for calculating the flow.(see table of meter measurements.) Once he has the data he compares the flow to the growers recorded amount on the District's Summary of Operation sheets in the District office. This process is completed every time the growers starts their meter.

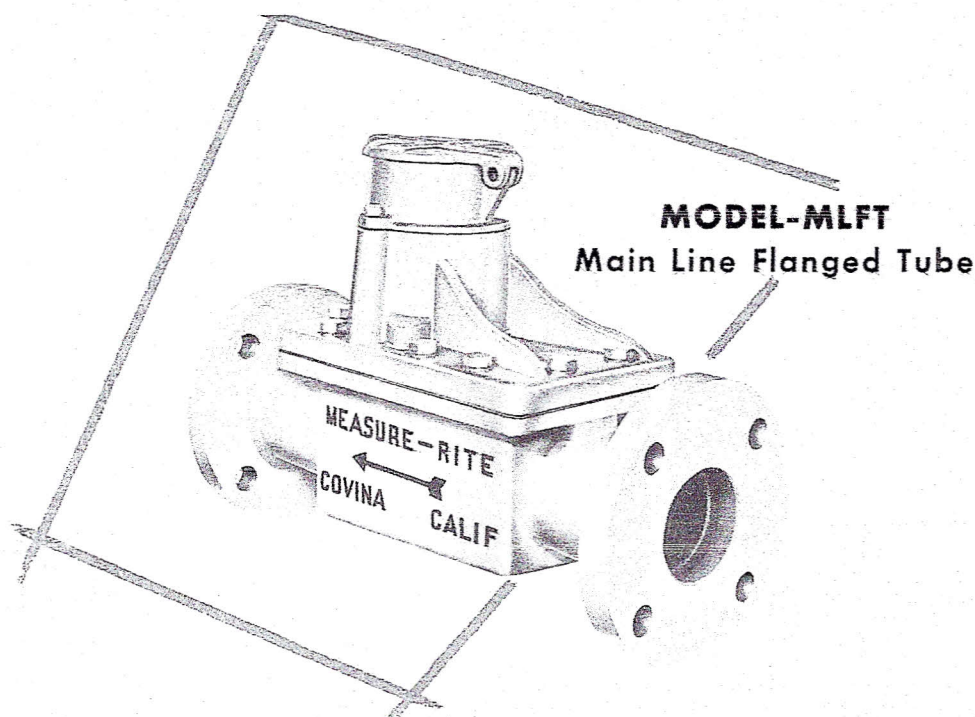
If there is large difference from the last reading the water tender will read to confirm. If still substantial difference we will check with grower to see if he has made changes to his system. If grower hasn't we will schedule for repair after completion of scheduled irrigation.

Another way the District monitors the meters is to compare District total monthly use to the Friant Water Authority Venturi meter located at the District's canal turnout. We have never been more than +/-3%.

### **Maintenance**

Grease the Measure-Rite meters every other month. Replace broken glass viewer. Newer water lubricated meters are virtually maintenance free except for keeping access to them clear.

The District has started a replacement program for all the Measure-Rite meters. The District has replaced some with the Water Specialty meter LP-21 and one Seametrics Irrigation Magmeter.



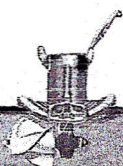
### METER SPECIFICATIONS

- Sizes - 2" to 4"
- Cast Iron Housing
- Standard A.S.A. Flanged Connections
- Stainless Steel Liner
- Stainless Steel Straightening Vanes
- Accuracy  $\pm 2\%$  of Actual Flow Within Normal Flow Range
- Working Pressure to 150 PSI
- Temperature 150°F (Special Construction on Request for Temperatures over 150°F)
- Polyethylene Propeller
- Bronze Gear Housing
- Stainless Steel Shafts & Ball Bearings
- Meter Housing Also Available in Aluminum, Bronze, or Stainless Steel (at Additional Cost)
- Meets A.W.W.A. Specifications (C-704-50)

### REGISTER SPECIFICATIONS

- Totalization in Gallons, Cubic Feet, Acre Feet, Miners Inch Hours, Miners Inch Days, Liters, Etc.
- Register Also Available with Rate-of-Flow Indicator
- Remote Totalization (Badger Read-O-Matic)

Meter & Pipe Size	Normal Flow Range GPM	Meter Tube Length (In)	Approx. Shipping Wt. - Lbs.
2	20 - 80	14	60
3	30 - 200	14	65
4	50 - 400	14	90



**BADGER MEASURE-RITE** *Propeller* **METERS**

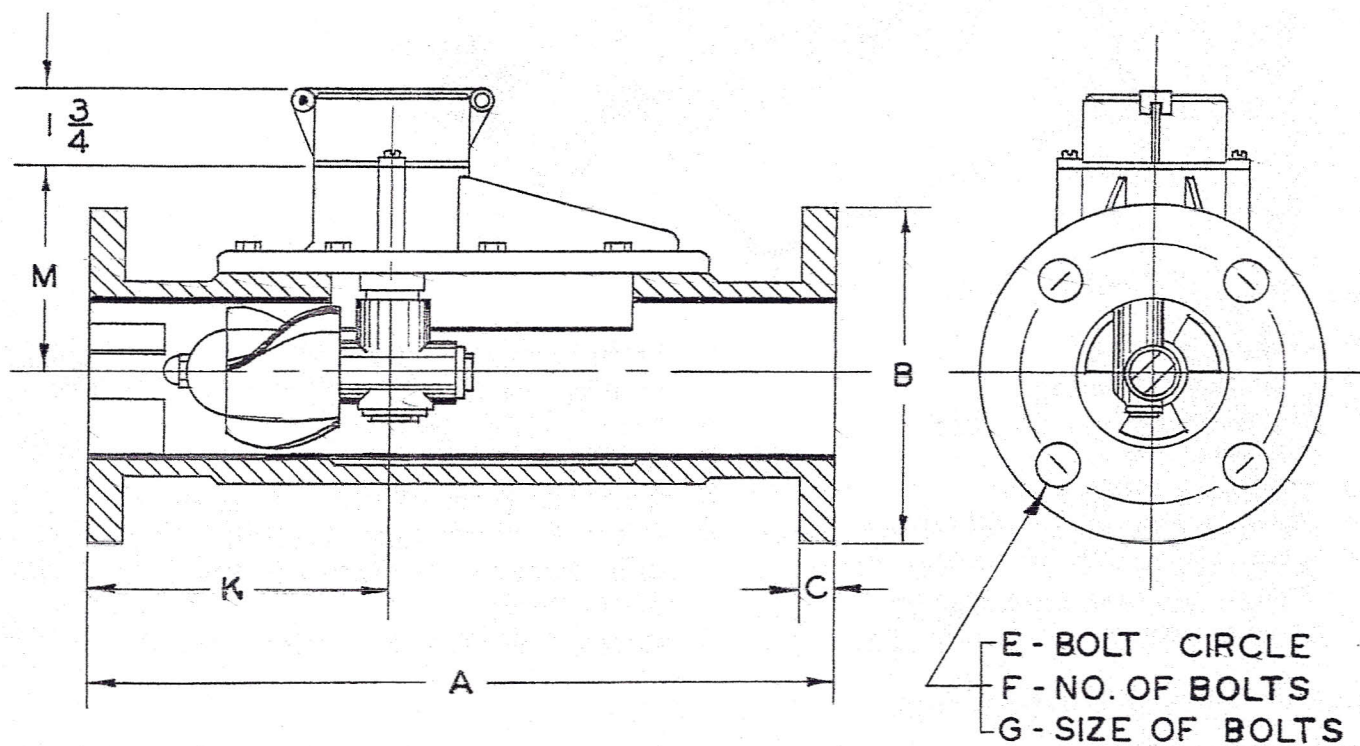
**LIQUID MEASURING EQUIPMENT**

MILWAUKEE, WIS.

COVINA, CALIF.

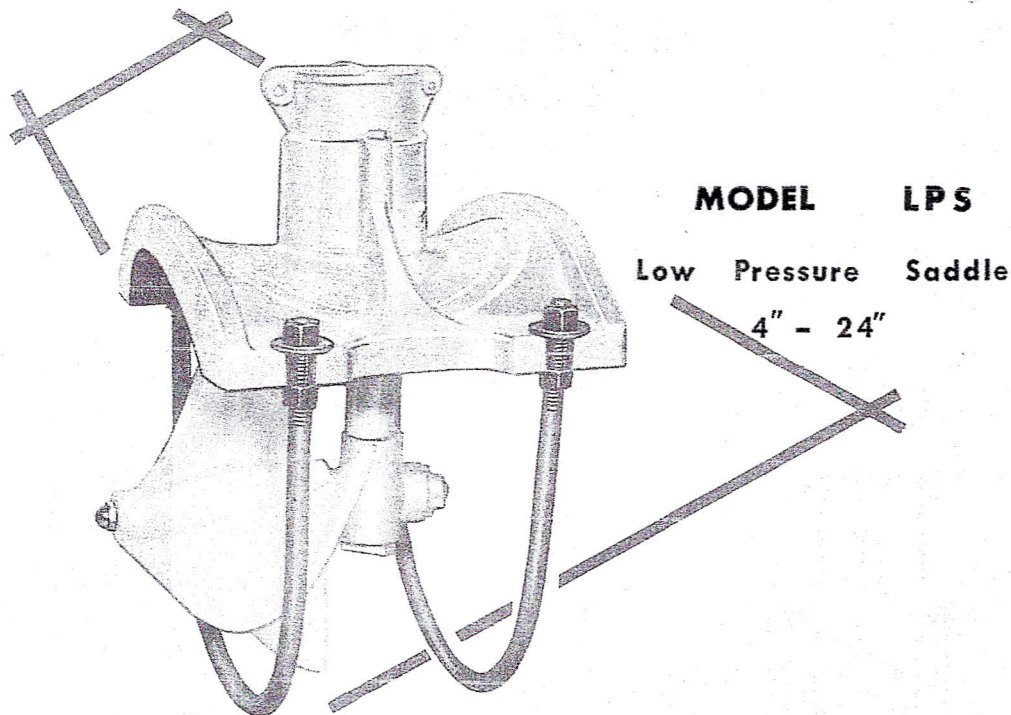
# MODEL MLFT

## 2" - 4" SIZE



### SPECIFICATIONS

METER PIPE SIZE	A	B	C	E	F	G	K	M
2	14	6	$\frac{3}{4}$	$4\frac{3}{4}$	4	$\frac{5}{8}$	6	5
3	14	$7\frac{1}{2}$	$\frac{7}{8}$	6	4	$\frac{5}{8}$	6	5
4	14	9	$\frac{7}{8}$	$7\frac{1}{2}$	8	$\frac{5}{8}$	6	7



### FEATURES AND SPECIFICATIONS

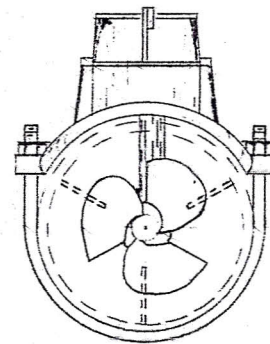
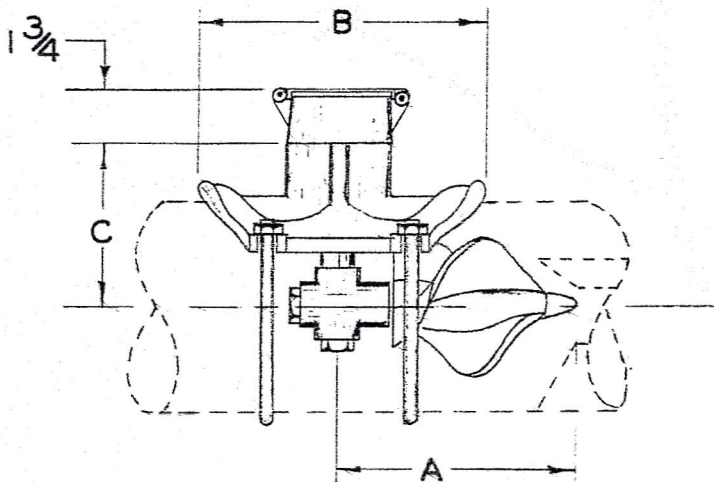
- MODEL LPS is used for irrigation and low pressure systems. It can be easily installed in the line with the U-bolt type fastener device and O-ring gasket
- ACCURACY plus or minus 2% of actual flow within normal flow range.
- WORKING PRESSURE to 100 PSI.
- TEMPERATURE to 150°F (Special construction for temperatures over 150°F)
- FLOW RANGE as noted is required for minimum accurate totalization. Maximum flow may be increased up to 150% of rated capacity for safe intermittent usage.
- TOTALIZER is of 6 digit straight reading type with test sweep hand. Total flow is shown in gallons, cubic feet, acre feet, etc. Totalizer cover has locking hasp.
- MATERIAL used consists of cast aluminum meter head, bronze gear housing, polyethylene propeller, stainless steel shafts and ball bearings. Meter head also available in bronze (at additional cost).
- OPTIONAL EQUIPMENT Watertight transmitters for operating recording instruments and controls can be furnished, also register extensions and cover plates.

**BADGER MEASURE-RITE** *Propeller* **METERS**

LIQUID MEASURING EQUIPMENT

# MODEL LPS

## 4"-24" SIZE

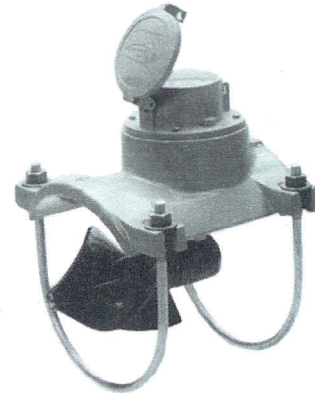
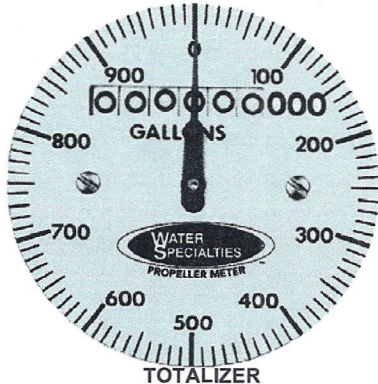


### SPECIFICATIONS

METER PIPE SIZE	NORMAL FLOW RANGE G.P.M.	A	B	C	APPROX. SHIPPING WT. POUNDS
4	50 - 400	4	8	$4\frac{13}{16}$	15
6	90 - 900	7	$8\frac{1}{2}$	6	20
8	100 - 1200	7	10	$6\frac{7}{8}$	25
10	125 - 1500	7	10	8	30
12	150 - 2000	8	10	9	35
14	250 - 2500	8	10	$9\frac{5}{8}$	40
16	275 - 3500	8	$12\frac{1}{2}$	$10\frac{5}{8}$	45
18	400 - 4500	8	$12\frac{1}{2}$	$11\frac{5}{8}$	50
20	475 - 5500	8	$12\frac{1}{2}$	$12\frac{5}{8}$	55
24	700 - 8000	8	$13\frac{1}{2}$	$14\frac{1}{2}$	60



**MODEL LP21**  
 150 psi STRAP-ON SADDLE METER  
 SEALED METER MECHANISM - MAGNETIC DRIVE  
 CAST STRAP-ON SADDLE - SEALED TOTALIZER  
 4" SIZE



#### DESCRIPTION

**MODEL LP21 STRAP-ON SADDLE METERS** are designed for irrigation or other low pressure service up to 150 PSI working pressure. The strap-on design permits installation on many types of pipe material (3/16" PVC wall minimum). It is necessary upon ordering to furnish the I.D. dimension of the pipe the meter is to be mounted on, for calibration purposes. The pipe O.D. dimension must be 4.50" for proper sealing of the saddle to the pipe.

**INSTALLATION** is made by cutting a hole in the existing pipe line and then attaching the meter securely to the line. Furnished u-bolts are used to attach the meter saddle to the line. The meter can be installed in any of the following positions: horizontally, vertically, or inclined on suction or discharge lines. The meter must have a full flow of liquid for proper accuracy. Fully opened gate valves, fittings, or other obstructions that tend to set up flow disturbances should be a minimum of ten pipe diameters upstream and two pipe diameters downstream from the meter. Installations with less than ten pipe diameters of straight pipe require straightening vanes. Meters with straightening vanes require at least five pipe diameters upstream and two pipe diameters downstream.

**PROPELLER** is magnetically coupled with the drive mechanism through the sealed oil filled gearbox. This completely eliminates water entering the meter assembly, as well as the need for any packing gland. The propeller is a conical shaped three bladed propeller, injection molded of thermoplastic material resistant to normal water corrosion and deformity due to high flow velocities.

**BEARING** in propeller is a water lubricated ceramic sleeve and spindle bearing system with a ceramic/stainless steel spindle. Dual ceramic thrust bearings, standard on all meters, handle flows in both forward and reverse directions. The bearing design promotes extended periods of maintenance free propeller operation. Bearings within the sealed meter mechanism are shielded precision stainless steel bearings and are factory lubricated for the life of the meter.

**TOTALIZER** is o-ring sealed and magnetically coupled with the driving mechanism, and features a six digit totalizer with a full 3" diameter, 100 division, center sweep dial that permits extremely accurate readings for timing purposes in determining flow rates. The totalizer dial can be furnished in gallons, cubic feet, acre feet, or any standard liquid measuring units. The bonnet, with padlock hasp, can be positioned in four different directions.

**CHANGE GEARS** may be easily exchanged in the field when changing the dial or when recalibrating for different pipe sizes. It is not necessary to remove pressure from the line.

**O-RING SEALS** are used at the meter head and all points where seals are required, making the meter mechanism completely immune to any of the corrosive effects of atmospheric moisture or the liquids measured by the meter assembly.

#### SPECIFICATIONS

##### ACCURACY

Plus or minus 2% of actual flow within the range specified for each meter size.

##### PRESSURE RANGE TEMPERATURE RANGE

Up to 150 PSI maximum working pressure.  
 140° F Maximum. Consult factory for special construction for higher temperatures.

##### MINIMUM FLOWS

As shown for meter and construction are required for accurate registration. See flow chart.  
 NOTE: Minimum flow will be higher when auxiliary equipment is added.

##### MAXIMUM FLOWS

As shown for meter and construction are rated for continuous operation. See flow chart.

##### INTERMITTENT FLOWS

As shown for meter are rated for 10% to 15% of the total time the meter is operating. Consult factory for High Velocity construction when intermittent flows are higher than shown on flow chart and/or when longer operating periods are required.

##### MATERIALS

Used in construction are chosen to minimize the corrosive effects of the liquids measured by the meter assembly.

MAGNETS - permanent ceramic type  
 INTERIOR BEARINGS - factory lubricated  
 PROPELLER BEARING - ceramic sleeve type  
 PROPELLER SPINDLE - ceramic coated stainless steel

PROPELLER - injection molded thermoplastic

GEARBOX - cast bronze

SEPARATOR - stainless steel

SHAFTS AND BOLTS - stainless steel

SADDLE - NSF approved fusion epoxy coated ductile iron

U-BOLTS - electro-galvanized dichromate sealed 101 B steel

##### OPTIONAL EQUIPMENT

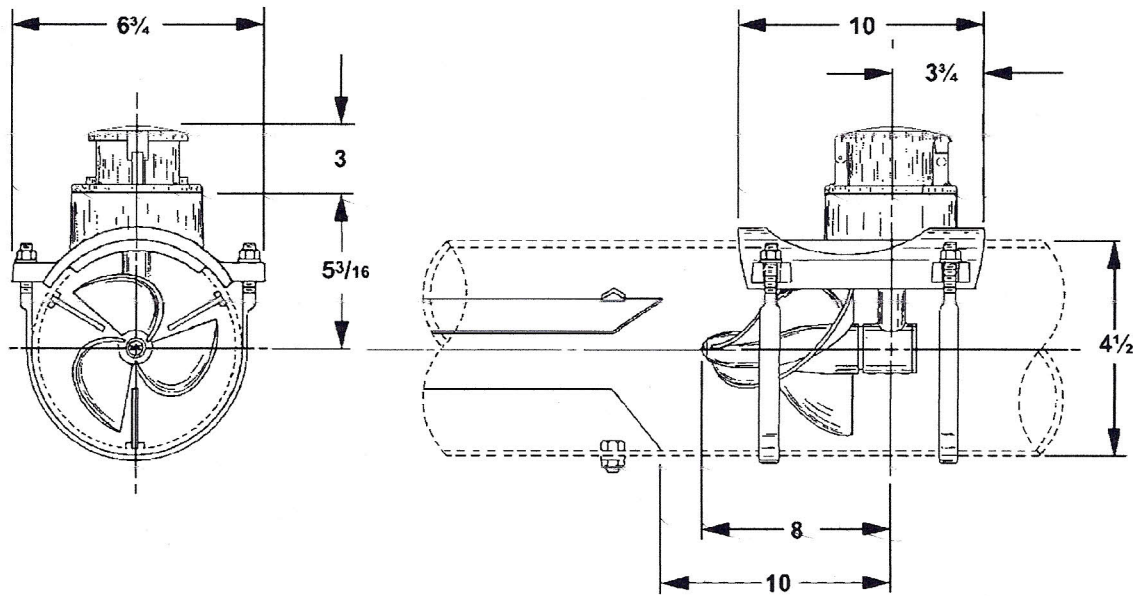
Totalizer extensions and a wide range of controls and instruments for indicating, totalizing and recording flow data for each meter. Special constructions and materials are available upon request.

##### ORDERING INFO

Must be specified by the customer and includes: Minimum and maximum flow ranges, pipe internal diameter, temperature of meter environment, totalizer dial units, type of materials and construction, and optional equipment desired.

30112-07 Rev. 4.4/01-05

**MODEL LP21**  
**150 psi STRAP-ON SADDLE METER**  
**SEALED METERMECHANISM - MAGNETIC DRIVE**  
**CAST STRAP-ON SADDLE - SEALED TOTALIZER**  
**4" SIZE**



**NOTE: PLEASE SPECIFY PIPE I.D.**

METER & PIPE SIZE	FLOW RANGES, GPM			SHIPPING WEIGHT POUNDS
	MIN.	MAX.	INT.	
4	80	500	700	28



Visit our Website: [www.mccrometer.com](http://www.mccrometer.com)  
 E-Mail: [info@mccrometer.com](mailto:info@mccrometer.com)

3255 WEST STETSON AVENUE • HEMET, CALIFORNIA 92545 USA  
 TEL: 951-652-6811 • FAX: 951-652-3078

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# AG2000

*Seametrics*

## IRRIGATION MAGMETER INSTRUCTIONS

AG2000 IRRIGATION MAGMETER INSTRUCTIONS

### FEATURES

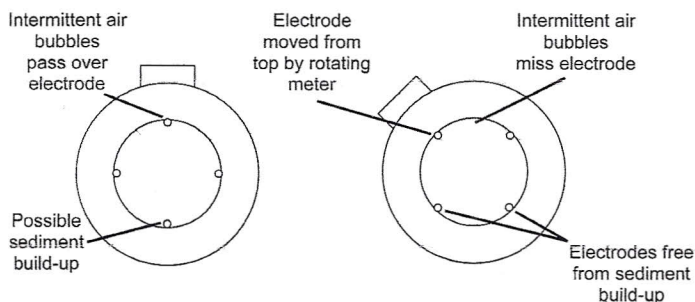
- Rate and total indicator
- Powder-coated diecast-aluminum electronics housing
- Cross-drilled screws (2) for tamper-evidence
- Tamper-evident security seal
- Internal data logger (Optional)
- Power/Output cable port access, Tamper-sealed
- Equalization lug
- Welded steel epoxy-coated flow tube
- 316SS electrodes
- Dual durometer rubber liner
- Flanges, ANSI 150 lb. drilling

## INSTALLATION

**Tamper-Evident Seal.** The battery-powered AG2000 has a seal wire to protect against unauthorized access. The seal can be broken to change units of measure, replace the battery pack, or to field-install a power/output cable (see page 4). **CAUTION:** If water usage regulation is in effect, only a person authorized by your regulatory agency should break the seal wire, and replace it when finished.

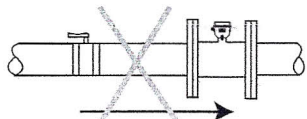
**Positioning the Meter.** These meters can be installed horizontally, vertically, and in any radial position. If sludge accumulation is possible, vertical or horizontal placement with the register at a 45° angle is recommended.

**Full Pipe Recommendations.** All magmeters require a method for determining that the pipe is empty, to prevent false reading. This meter is designed to go to zero reading if one or more electrodes is exposed. For highest accuracy, install the meter so that the pipe will be full when there is flow. If air bubbles may be present in the pipe, rotate the meter by one flange hole to position the control housing at a 45° angle. See mounting diagrams below.

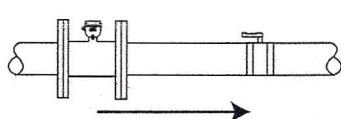


**Possible Problem:** Air bubbles and sediment on the electrodes can affect accuracy.

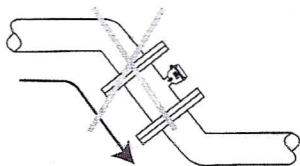
**Better Installation:** Improved accuracy results from unimpeded electrodes.



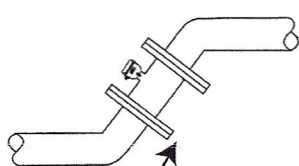
**Possible Problem:** Air pockets, accuracy loss, empty pipe reading



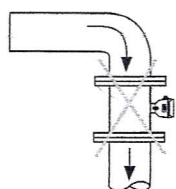
**Better Installation:** Keeps pipe full at sensor for accuracy



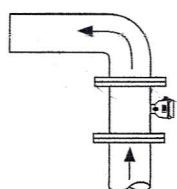
**Possible Problem:** Air can be trapped, loss of accuracy



**Better Installation:** Allows air to bleed off, higher accuracy

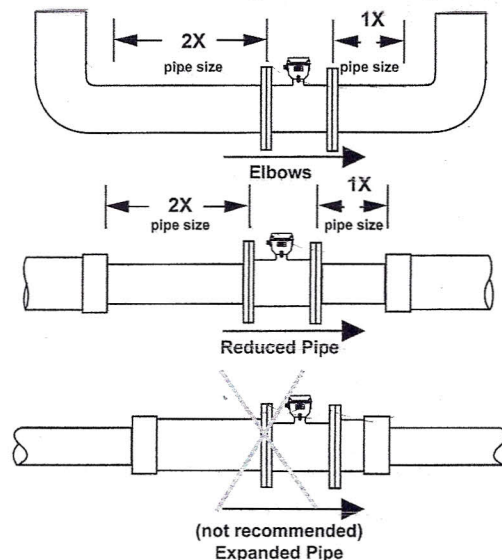


**Not Recommended:** Vertical downflow, open discharge



**Better Installation:** Vertical upflow with full pipe

**Straight Pipe Recommendations.** See the diagrams below for manufacturers' recommendations. **Local regulations may vary, confirm before installing to assure compliance.**



**Note:** See Technical Bulletin 'Piping Configurations for AG2000 Magmeters' at [www.seametrics.com](http://www.seametrics.com) for additional configuration information.

**Chemigation Applications.** Magmeters in chemigation applications must be placed either upstream of the chemical injection line, or far enough downstream for complete mixing to occur before the solution reaches the meter. Proper placement prevents spikes and drops in readings that result when fluids of different conductivity pass through the meter. (For more information, refer to the technical bulletin on the Seametrics website Downloads page.)

**Fittings and Flanges.** The AG2000 flanges have standard ANSI 150 lb. drilling, and should match up with any other ANSI 150 lb. flange. **IMPORTANT:** Piping protruding beyond welded-on flange faces may damage meter sealing surfaces.

**Temperature.** These flow sensors are recommended for operating temperatures of 10° to 130° F (-12° to 54° C) and non-operating temperatures of -40° to 158° F (-40° to 70° C).

**Calibration.** The AG2000 is factory calibrated and cannot be recalibrated in the field.

**Protecting the Meter.** A weather guard is recommended (Seametrics part #31388) for environmental protection.

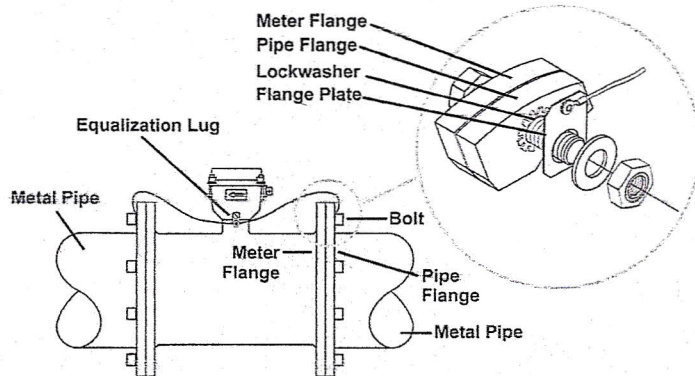
**Conductivity.** The AG2000 requires media with >20 microSiemens/cm of conductivity.

### FLOW RANGE

	Minimum	Maximum
4"	12 gal/min (.75 liter/sec)	500 gal/min (31 liter/sec)
6"	32 gal/min (2 liter/sec)	1,200 gal/min (76 liter/sec)
8"	60 gal/min (4 liter/sec)	2,200 gal/min (139 liter/sec)
10"	95 gal/min (6 liter/sec)	3,500 gal/min (220 liter/sec)

# EQUALIZATION and GROUNDING

**Metal Pipe Installations.** To equalize the electric potential of the fluid, the meter, and the surrounding pipe, secure the flange plates, factory-installed on equalization lug, to both pipe flanges at one of the bolt holes. Be sure the lockwasher provided fits between the pipe flange and the flange plate.



**Equalization Diagram**

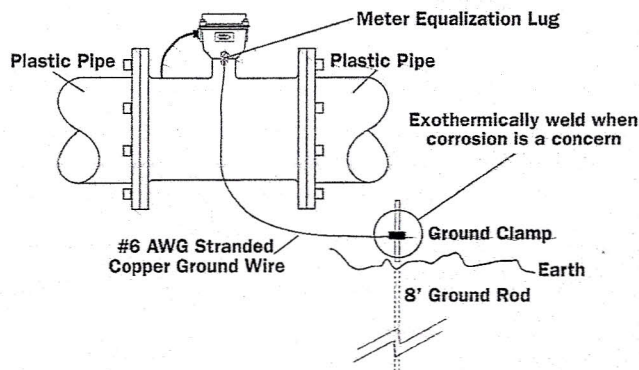
Run wire from equalization lug to both pipe flanges; secure flange plates under bolt heads as shown.



## WARNING: ELECTRICAL SHOCK HAZARD

When the AG2000 is installed in a plastic piping system, or when externally powered, it is very important to ground the meter to avoid electrical shock hazard. Failure to do so can result in electrocution.

**Plastic Pipe Installations.** In plastic pipe it is not necessary to use the equalization straps, but the meter must be grounded to avoid electrical shock and electro-static interference with meter function.



**Battery Power (standard).** The AG2000 is powered by a non-rechargeable battery pack with a lifespan of up to 5 years under typical use. Actual lifespan will vary from application to application, depending on the duty cycle.

"Low Batt" will display when it is time to replace the battery (see illustration at right). Replacement instructions come with the custom battery pack available from your dealer or Seametrics.

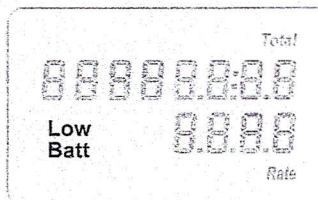
**NOTE:** Memory will not be lost during a battery change.

**External Power (optional).** Where power is available, the life of the battery pack can be indefinitely extended by the addition of an external power input cable. When external power is used, the batteries serve as backup in case of power failure, keeping the meter reading out during an outage. The display reads "P" to indicate that external power is in use (see illustration at right).

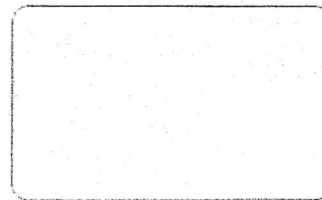
When the display is reading numbers/letters but neither the "Low Batt" or "P" symbol is displayed, the meter is functioning normally under battery power (see illustration at right). When the display is completely blank, the meter is not powered.

**Solar Power (optional).** In most areas of the US, a 12-volt, 5 watt solar power unit (panel, charge controller and battery) should suffice to operate the meter. In this case, the internal batteries will serve as backup and battery life will be conserved.

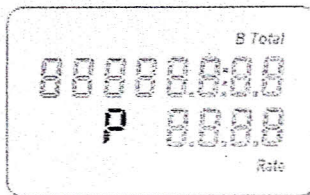
**Display Reading.** There are two lines to the display, the bottom line for flow rate and the top line for accumulated total. Measurement units are pre-ordered and factory-set and can be changed in the field only by an authorized individual.



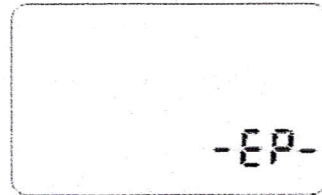
**Low Battery Indicator**



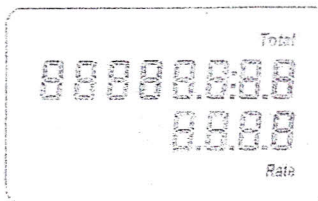
**No Power**



**External Power Indicator**



**Empty Pipe**



**Battery Power**



**Meter Installed Backwards**



# METER CALIBRATION REPORT

**Model** AG2000-400

**Rate Units** GPM

**Total Units** AF

**Serial Number** 03124387

**10% Flow Rate (GPM)** 50.28

**% Error** 0.231

**Pulse Output** 16.362 PPG

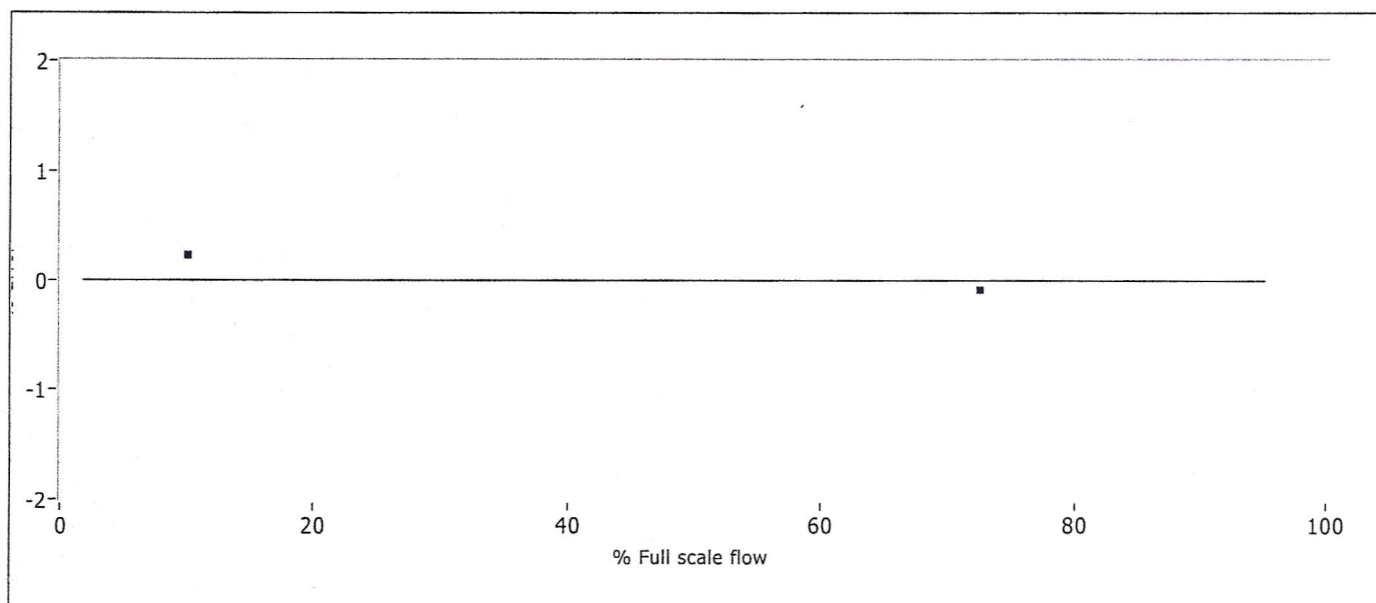
**High Flow Rate (GPM)** 362.4

**% Error** -0.0844

**Calibrated by:** andrey

**Date:** 4/19/2012

**Time:** 1:05 PM

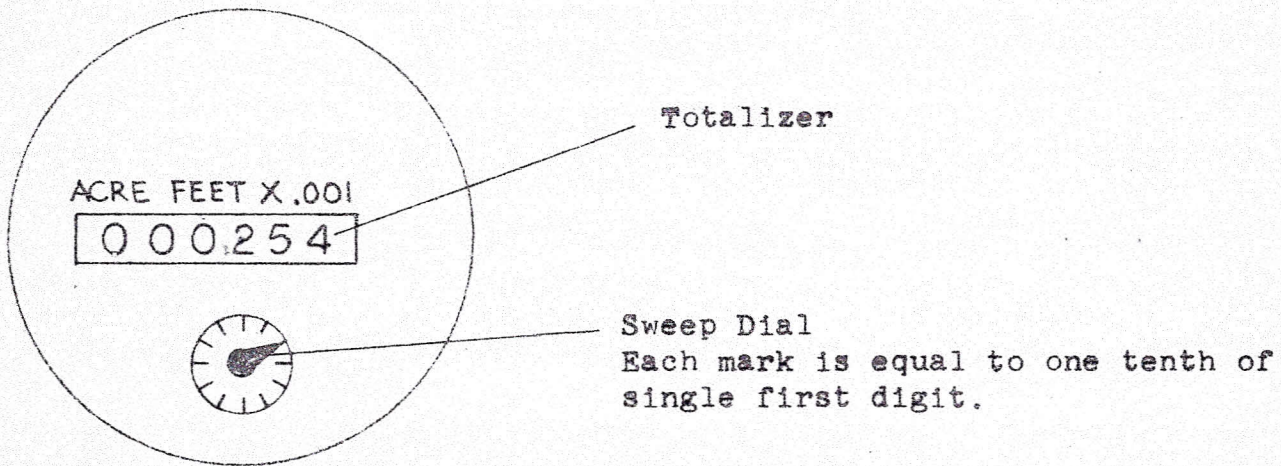


Temp (F)	Flow (GPM)	Meter Output (PPG)	Type A Uncertainty	Type B Uncertainty	Combined Expanded Uncertainty
79.2	362	16.35	0.0138	.35%	0.118
79.2	50.3	16.4	0.0378	.35%	0.137

- 1) Type A uncertainty was the bias, where bias = nominal output – measured output. Degrees of freedom was equal to 1.
- 2) Type B uncertainty was the uncertainty of meter output and flow rate measurements at the 67% confidence probability. Contact SeaMetrics for documentation regarding measurement uncertainty and the calibration system.
- 3) The combined expanded uncertainty was twice the Root Sum Square (RSS) of the bias and measurement uncertainty. Combined Expanded Uncertainty =  $2 \times \text{RSS}(\text{bias, measurement uncertainty})$ . Coverage factor was equal to 2.
- 4) Meter output and flow rate measurements are traceable to NIST.

See: Peery J, and Frederick J. "A Measurement Assurance Program for Flow Calibration by the Transfer Method." Cal Lab Magazine, Jan., 2005

# HOW TO READ REGISTER CLOCK



## Calculation Example

Totalizer Reading		254.
Sweep Dial Reading	Add	<u>.2</u>
		254.2 Acre feet x .001

To Get Acre Feet Multiply As Instructed

Register Clock Total Reading =		254.2
	x	<u>.001</u>
		.2542 Acre feet

As can be seen, we are only moving the decimal point over three places to the left and can be read directly from the dial and then add one ten-thousands for each mark on the sweep hand dial.

	000.254
Add	<u>.0002</u>
	.2542

**TABLE OF METER MEASUREMENTS**  
Based on 0.0001 Meter

Sec. Per. Rev.	Inches Miners	Sec. Ft.	Gallon Per Minute	Acre Feet Per 24 Hours
60	3.6	0.07	32	0.14
30	7.3	0.15	65	0.30
21.8	10.	0.20	90	0.40
18	12.1	0.24	109	0.48
16	13.6	0.27	122	0.54
15	14.5	0.29	130	0.58
14.5	15	0.30	135	0.59
14	15.6	0.31	140	0.61
13	16.8	0.34	151	0.67
12	18.2	0.36	163	0.71
11	19.8	0.40	178	0.79
10.9	20	0.40	180	0.79
10	21.8	0.44	196	0.87
9	24.2	0.48	217	0.95
8.7	25	0.50	224	0.99
8	27.2	0.54	244	1.09
7.3	30	0.60	269	1.19
7	31.1	0.62	279	1.23
6.2	35	0.70	314	1.39
6	36.3	0.73	326	1.45
5.4	40	0.80	359	1.59
5	43.6	0.87	391	1.73
4.8	45	0.90	404	1.78
4.4	50	1.00	449	1.98
4	55	1.10	494	2.18
3.7	58.9	1.18	529	2.34
3.6	60	1.20	539	2.38
3.4	65	1.30	583	2.58
3.0	72.6	1.45	652	2.88
2.9	75.1	1.50	674	2.97
2.8	77.8	1.56	698	3.09
2.7	80.7	1.61	724	3.19
2.6	83.8	1.68	752	3.33
2.5	87.1	1.74	782	3.45
2.4	90.8	1.82	815	3.61
2.3	94.7	1.89	850	3.75
2.2	99.0	1.98	889	3.93
2.1	103.7	2.07	931	4.10
2.0	108.9	2.18	978	4.32
1.9	114.6	2.29	1029	4.54
1.8	121.0	2.42	1086	4.80
1.7	128.1	2.56	1150	5.07

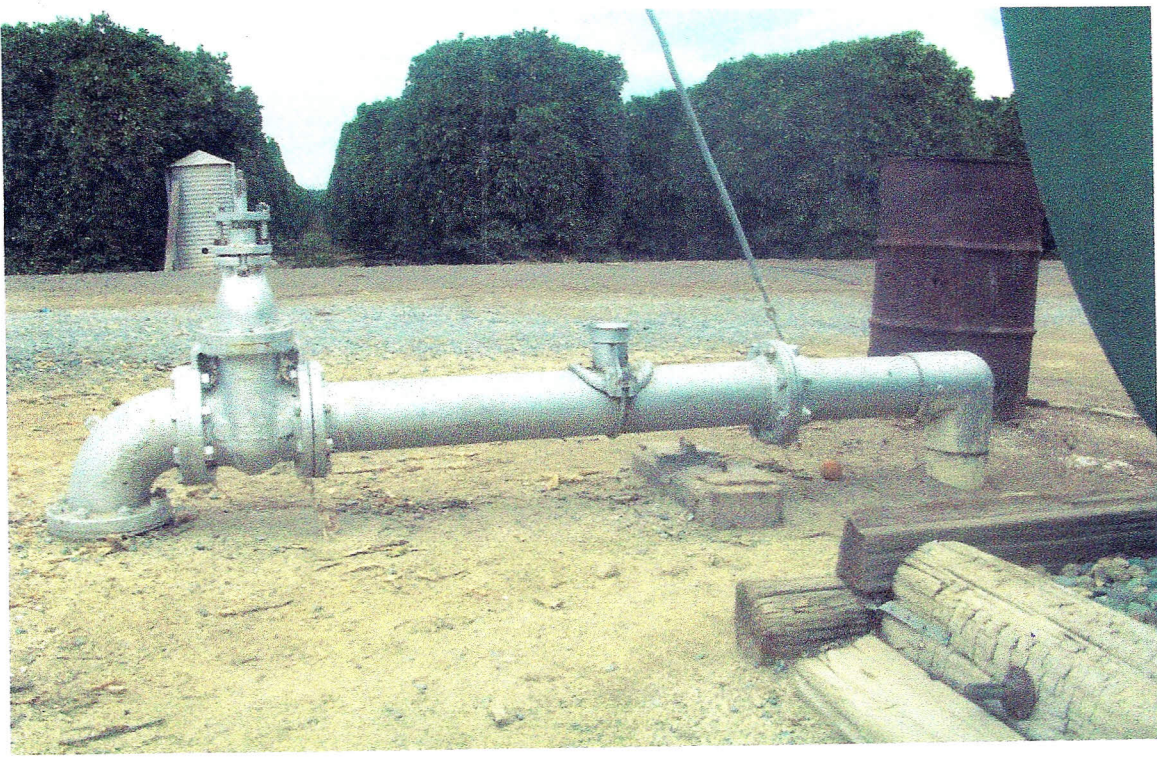
1 Inch of Water (Miners Inch) = 9 gal. per minute

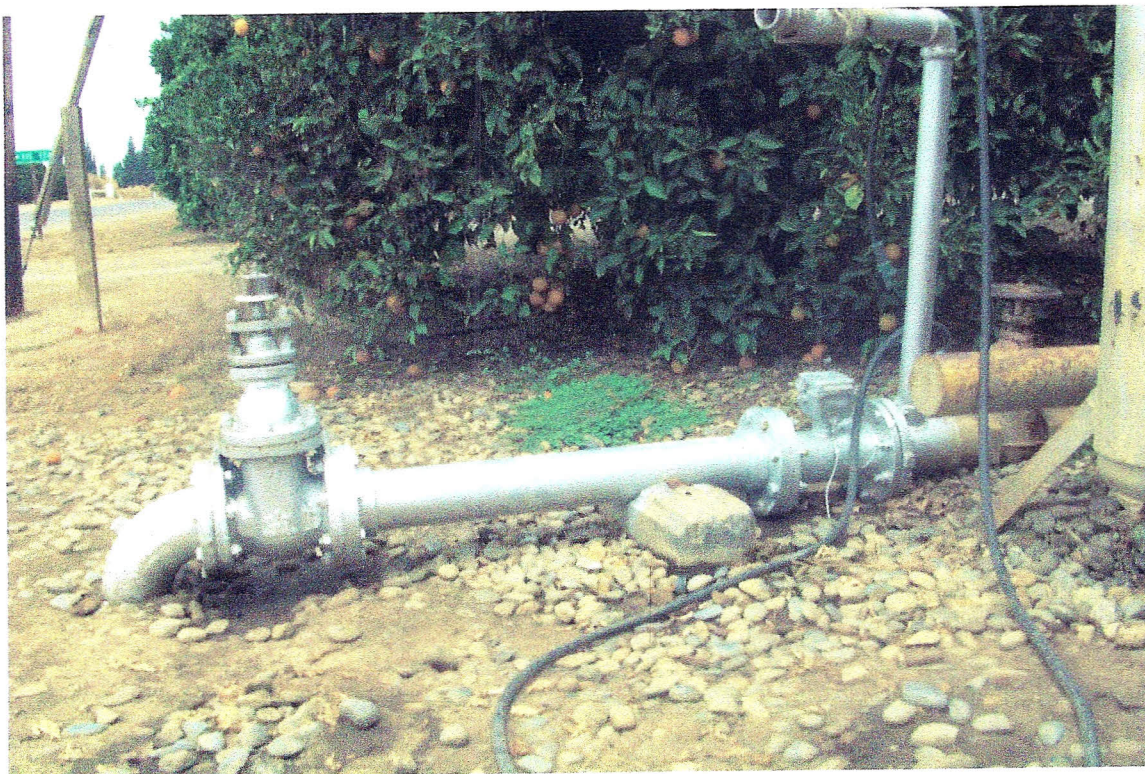
1 Second Foot of Water = 50 Inches, or 450 gal. per minute

1 Acre Foot = The amount of water required to cover one acre of  
land one foot deep in 24 hours

1 Acre Foot of Water = 325,850 gal., or 43,561 cubic feet.







**ATTACHMENT D**  
**District Sample Bills**

Tea Pot Dome Water District  
105 W. Teapot Dome Avenue  
Porterville, CA 93257

# Statement

Apr 27, 2011

559-784-8641

Amount Enclosed

\$ \_\_\_\_\_

Date	Acre Feet	Description	Amount	Balance
1/10/09	2009-83A	PO# 23	1,467.81	1,467.81
6/2/09	06/02/09	Payment	-1,467.81	0.00
1/10/10	2010-83A	PO# 23	1,467.81	1,467.81
6/15/10	06/15/10	Payment	-1,467.81	0.00
1/10/11	2011-83A	PO# 23	1,467.81	1,467.81
2/8/11	02/08/11	Payment	-1,467.81	0.00
Total Due (Credit)				0.00

Charges or payments made after last date shown will appear on your next statement.

Tea Pot Dome Water District  
105 W. Teapot Dome Avenue  
Porterville, CA 93257

# Statement

Dec 31, 2011

559-784-8641

Amount Enclosed

\$ \_\_\_\_\_

Date	Acre Feet	Description	Amount	Balance
12/31/09		Balance Fwd		39.00
3/24/10	03/24/10	Prepayment: 5.37 A.F. ORDERED	-764.63	-725.63
4/30/10	.96	Acre Feet Used	129.60	-596.03
5/31/10	2.23	Acre Feet Used	301.05	-294.98
6/30/10	3.24	Acre Feet Used	437.40	142.42
7/13/10	07/13/10	Prepayment	-142.42	0.00
7/31/10	3.95	Acre Feet Used	533.25	533.25
8/31/10	03.53	Acre Feet Used	476.55	1,009.80
9/30/10	2.78	Acre Feet Used	375.30	1,385.10
10/31/10	1.03	Acre Feet Used	139.05	1,524.15
11/30/10	1.36	Acre Feet Used	183.60	1,707.75
Total Due (Credit)				1,707.75

Charges or payments made after last date shown will appear on your next statement.

**ATTACHMENT E**  
**Groundwater Management Plan**

## BOARD OF DIRECTORS

David R. Sherwood, President  
Donald J. Laux  
Dan Galbraith  
Douglas Peltzer  
Richard Job

# TEA POT DOME WATER DISTRICT



105 W. TEA POT DOME AVE • PORTERVILLE, CA 93257  
TELEPHONE: (559) 784-8641

CATHERINE FABRICUS

Secretary, Treasurer  
Assessor-Tax Collector

Keith Norris  
Superintendent/Manager

Tea Pot Dome Water District (TPDWD) is a member of a local water Authority in which TPDWD is a participant of a groundwater Management Plan (Plan). In July 2006, the Authority adopted a groundwater Management Plan in accordance with the implementing provisions of AB3030 and compliant with the provisions of Senate Bill 1938 and Assembly Bill 105. The Plan area is all the land within the boundaries of the Authority's participating entities, excepting those lands managed by agreement with other entities in the westerly portion of the Authority's service area.

In accordance with the Plan objectives, the Authority has incorporated participation of each of the member entities into the Plan. The Authority currently has seven member entities.

Since the Authority's formation, a variety of programs have been implemented to promote and enhance groundwater recharge. These include, but are not limited to, recharge basin activities, water importation and proactive efforts to insure that dry year water supply reliability export projects have a net positive long-term balance.

Annual activities include continuous logging of groundwater levels in the monitor wells down-slope of the recharge facilities and monitor groundwater levels in all member districts. An annual meeting with participants to review and discuss groundwater conditions, water supplies, groundwater recharge, recharge basin development and other activities directly and indirectly related to the Plan.

**ATTACHMENT F**  
**Groundwater Banking Plan**

### Narrative Description of Project

The Tea Pot Dome Water District's (District) Groundwater Storage and Conjunctive Management of Surface Water and Groundwater Project (Project), involved the construction of a 10-acre groundwater recharge basin for groundwater storage, the installation of a groundwater extraction well and the construction of a pipeline for the delivery of stored groundwater to the District's existing distribution system.

The Central Valley Project (CVP), Friant-Kern Canal would provide the source and means of conveyance of water for the Project. The Friant-Kern Canal is operated and maintained by the Friant Water Authority of which the District is a member.

The purpose of the Project will be to divert CVP contract Class 1, Section 215 and RWA water supply for groundwater storage during wet years for extraction in dry years to meet the applied irrigation water requirements of the irrigated lands of the District.

### Legal Description of Project Site

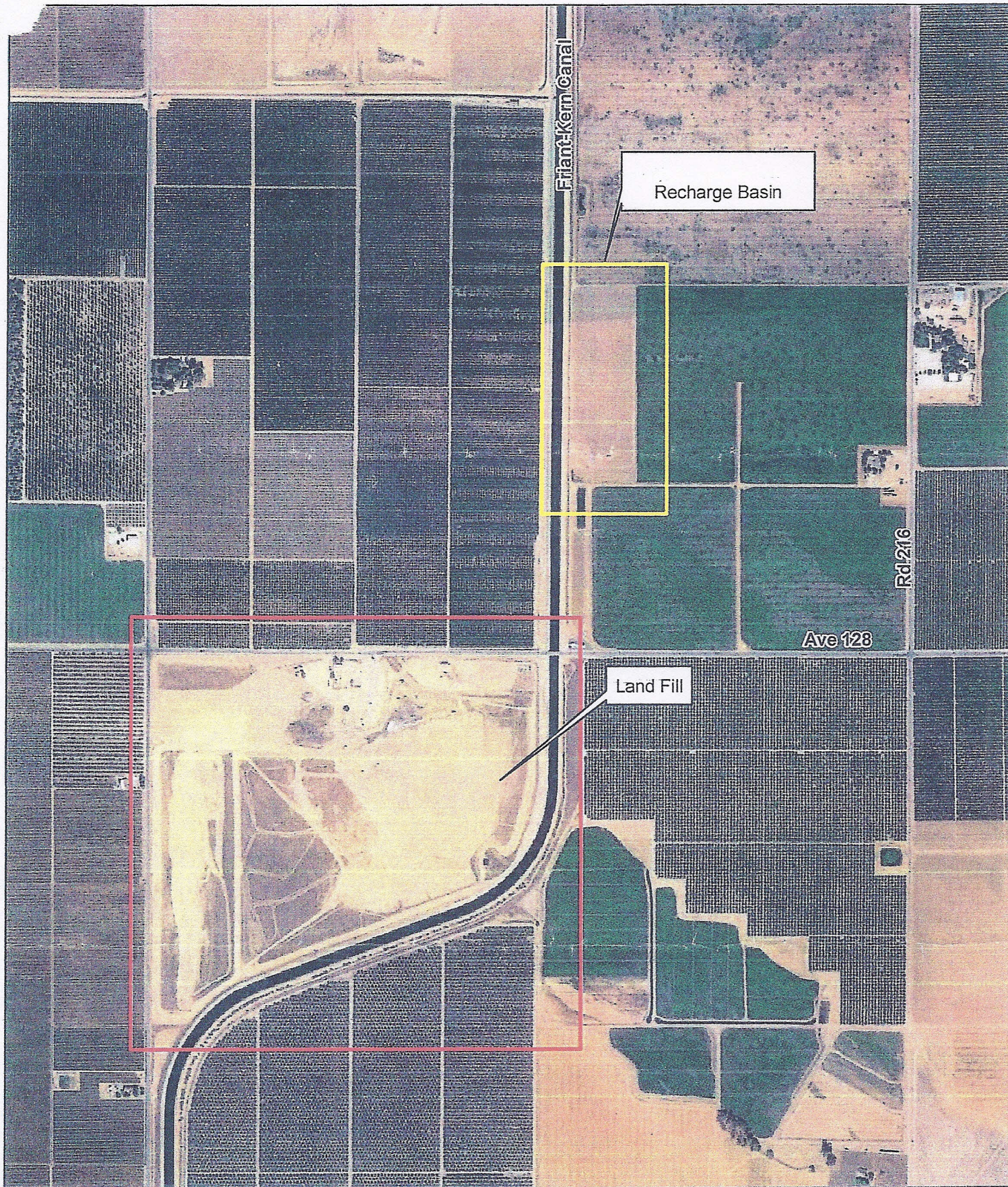
The Project site is situated in Lot 36 of Porterville Fruit & Farms Tract, recorded in Book 15 at Page 23, Tulare County records, being a portion of the Northwest quarter (NW4) of the southeast quarter (SE4) of Section 7, Township 22 South, Range 27 East, Mount Diablo Base and Meridian, approximately 7-miles south westerly of the City Of Porterville, in the County of Tulare, State of California.

### Soil

Ducor Adobe Clay and San Joaquin Loam from surface to lower part of subsoil 15 to 50 inches depths. Sand at the southwest end of the basin at a depth of 48 inches.

### Recharge

The District was able to recharge 362 acre-feet in 2011. This was the first use of the basin since completing the Project. Percolation rate at the beginning was 4.65 acre-feet a day. Finished with 3.30 acre-feet a day.



- Tea Pot Dome Water District -  
Recharge Basin Proposed Location



Not to Scale

**ATTACHMENT G**  
**Notices of District Education Programs**  
**and Services Available to Customers**

# Irrigation Tech-Line

**G**ood water management requires an understanding of when to irrigate, how much water to apply, and how to uniformly apply the water over the field. The first step to becoming an efficient water manager is to understand units of water measurement.

One Acre-Foot = 325,851 gallons

One Acre-Inch = 27,154 gallons

These are volume measurements, the volume of water that cover an acre of land one foot or one inch deep:

One acre = An area of land that is 43,560 ft<sup>2</sup>

One cubic foot (ft<sup>3</sup>) = 7.48 gallons

One acre-foot = 43560 ft<sup>2</sup> x 1 foot water depth

= A volume that is 43,560 ft<sup>3</sup>

One acre-foot = 43,560 ft<sup>3</sup> x 7.48 gallons/ft<sup>3</sup>

= 325,851 gallons

One acre-inch = 43,560 ft<sup>2</sup> x .0833 ft (1 inch) a volume that is 3,630 ft<sup>3</sup>

One acre-inch = 3,630 ft<sup>3</sup> x 7.48 gallons/ft<sup>3</sup>

= 27,154 gallons

The amount of water applied to a field is usually reported in acre-inches of water, and the rate of E.T. (evapotranspiration) for crops is usually given in acre-inches per day.

However, pump discharge is usually given in gallons per minute, and herein lies some confusion when calculating pumping time for an irrigation.

Thinking in terms of gallons rather than acre-inches makes it easy to determine how long to run your pump to apply a given irrigation amount. A four inch irrigation is about 110,000 gallons per acre (4 inches x 27,154 gallons/inch = 108,616 gallons); a six inch irrigation is about 160,000 gallons per acre.

## What Water Units Mean

Knowing Them  
Is A Key First Step  
Toward Efficient  
Irrigation Management

This article is reprinted from the University of California Co-operative Extension, Tulare County, website.

**Example:** Assume you are going to irrigate a 50 acre field and apply 110,000 gallons per acre (4 inch irrigation), and your pump discharges 750 gallons per minute. How long will you have to run the pump.

**The answer: 5.1 days.**

Calculated as follows:

- 50 acres x 110,000 gallons per acre = 5,500,000 gallons

- 5,500,000 gallons/750 gallons per minute pumping discharge = 7,333 minutes pumping time

- 7,333 minutes/60 minutes per hour = 122 hours; 122 hours/24 hours per day = 5.1 days

Keeping a record of how much water is applied each irrigation is the key to maximizing production and irrigation efficiency.

By keeping records, the irrigator often discovers that too little water is applied during hot summer months when water infiltration rates are slow and crop water use is high; or it may be discovered that too much water is applied to shallow hard pan soils, creating a water logged soil; or, that too much water is applied to well drained soils, thus increasing energy and water costs.

A water meter is the most direct way of tracking irrigation amounts.

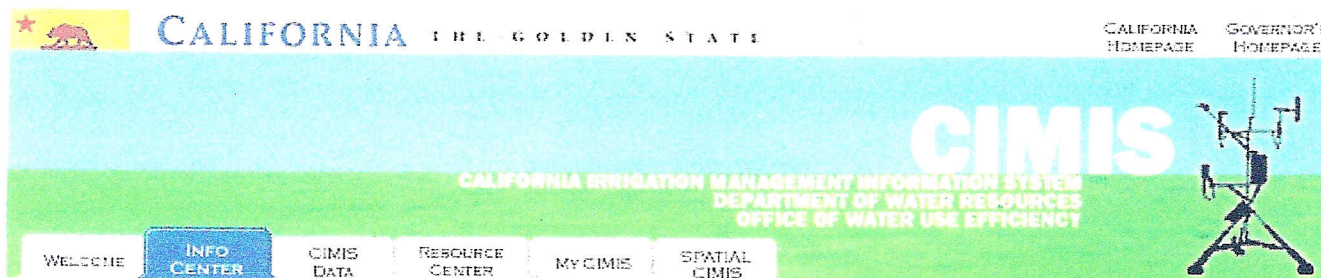
However, irrigation amounts can

also be determined by noting pumping time per irrigation along with pump discharge rate as shown in the above example.

**Another Example:** You have 50 acres of drip irrigated vineyard with 454 vines per acre. The average E.T. for this vineyard during the month of July is 0.2 acre-inches per day. How many gallons of water must be applied daily to the vineyard to keep up with E.T.? How many gallons does an individual vine use each day?

**Answer: 271,500 gallons per day for the 50 acre vineyard, and 12 gallons per day for an individual vine.**

Please see **Water Units**, next page



## General

CIMIS Overview  
CIMIS Data Uses

## Weather Stations

Station List  
Location Maps  
Sensor Specs  
Siting Info  
Network Maintenance

## Evapotranspiration

ET Overview  
Equations  
Crop Coefficients  
ETo Zones Map

## Irrigation

Irrigation Overview  
Water Budget  
Irrigation Scheduling  
Mobile Labs  
Software  
Consultants

## Station Detail Report

The **Station Detail Report** provides detailed information on CIMIS stations including the region in which they are located, nearby city, installation dates, termination dates (if inactive), geographic locations (latitude and longitude), elevations above sea level, zip codes, surface types (grass or alfalfa), station site descriptions, and photographs of the stations.

### Porterville #169

San Joaquin Valley Region Tulare County San Joaquin District  
Nearby city is Porterville

- Activated On August 02, 2000
- Station is Active
- ETo Reported
- Reference Surface is Grass
- Datalogger is CR10



Station Picture Unavailable

Station 169  
North | South | East | West |

### Geographic Information

Elevation (ft): 400  
Latitude: 36°04'52"N / 36.08  
Longitude: 119°05'33"W / -119.09

### Associated Zip Codes

93218, 93247, 93257, 93258, 93267, 93270

### Station Siting Description

DATE: 11-18-02

STATION#: 169  
STATION NAME: Porterville  
ETO ZONE: 12  
PREVAILING WINDS:  
LOCAL CHARACTER: Agricultural region including grapes (raisin/wine), citrus, and cotton.

### DESCRIPTION OF STATION SITE:

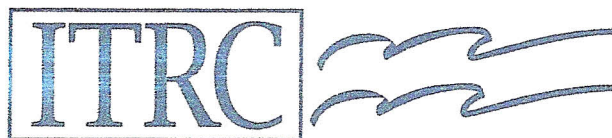
The station has been installed on a private farm. The grass is flood irrigated.

NORTH:  
200ft: Pasture  
200+ ft: Walnut trees (NW)  
200+ ft: Pasture (NE)

EAST:  
300+ ft: Pasture

SOUTH:  
200ft: Pasture  
200+ ft: Walnut trees (SE)  
200+ ft: Pasture (SW)

WEST:  
300+ ft: Pasture



*moving water in new directions*

IRRIGATION TRAINING AND RESEARCH CENTER

California Polytechnic State University

San Luis Obispo, CA 93407

Phone: (805) 756-2434

FAX: (805) 756-2433

www.itrc.org Contact: Dr. Burt [cburt@calpoly.edu](mailto:cburt@calpoly.edu)

**Summer Irrigation Evaluation Program**  
**Drip/Micro Irrigation Systems**

Funded by the US Bureau of Reclamation, Water Conservation Office (Fresno)

Supported by local Irrigation/Water Districts

What the student team does:

- Spends about 1 day in the field taking measurements of pressures, flows, and make observations of the filtration, chemical injection, etc.
- Inputs data into the Cal Poly ITRC Irrigation Evaluation Programs, examines field data.
- Prints out the data, results, and recommendations
- Sets up an appointment with the farmer to review the information.

The type of information provided:

The Cal Poly ITRC Irrigation Evaluation Programs provide:

- The Distribution Uniformity (DU) of the irrigation system. **The DU is a measure of how evenly the irrigation water is applied to plants throughout a field.**
- The causes of non-uniformity. For example, the program will tell a farmer what percentage of the non-uniformity is due to plugging, what percentage is due to pressure differences, etc.
- Recommendations on how to improve that specific system's performance.

Who gets the information:

- The farmer
- The irrigation district (but without any farmer's name or address)
- The USBR (but without any farmer's name or address)
- Cal Poly ITRC

The obligation by the farmer:

- There is no fee; it is completely funded by the USBR
- The farmer must agree to have someone show the students the field, explain the layout, and start and stop the pump on the agreed-upon date and at the agreed-upon time.
- If the system is a subsurface drip system, the farmer must provide workers with shovels to uncover tape in 3 locations, about 30' per location.
- The farmer must be willing to take the time to sit down and go over the results (about 30 minutes).

Why participate?

- Irrigation systems cost money to operate, and their performance has a huge impact on yield and yield quality. Older systems need to be checked out just as automobiles do. Sometimes they need a tune-up; sometimes they don't. This evaluation lets a farmer know if a tune-up is needed, and what types of things can be done.
- On the average, we find that the DU of drip/micro systems is about 0.76 (out of a perfect 1.00), whereas reasonably attainable values are about 0.92 for drip/micro systems. If you can shift from a DU of 0.76 to a DU of about 0.92, the ratio of (maximum/minimum) water applied to different plants throughout a field will shift from about (2/1) to about (1.2/1).
- Farmers should expect a high DU from a new irrigation system. This program allows farmers to verify the quality of a new system that might have been recently purchased.

## 2012 California Water Awareness Campaign Contributors

ACWA	East Niles CSD	Pelger MWC
ACWA-JPIA	Elsinore Valley MWD	Provost & Pritchard Engineering Group
Alameda County WD	Fieldman, Rolapp & Assoc.	Purissima Hills WD
Ambient Technologies	Firebaugh Canal WD	Rain For Rent
American Water	Foresthill PUD	Rau & Associates
Apple Valley Ranchos WC	Garfield WD	Riverdale ID
Aqualastic By Hydro Consulting	Henry Miller Reclamation District #2131	RMC Water & Environment
Aromas WD	Hidden Valley Lake CSD	Rogina WC
Azusa Light & Water	Hydro Consulting	Rosamond CSD
Baker, Manock & Jensen	IDE Americas Inc.	Rowland WD
Bakman WC	Inland Empire Utilities Agency	Rubidoux CSD
Bartkiewicz, Kronick & Shanahan	International WD	RMC Water & Environment
Bay Area Water Supply	Kaweah Delta WCD	San Gabriel CWD
& Conserv. Agency	Kaweah River PA	Sacramento Suburban WD
Bear Valley CSD	Kaweah & St. Johns Rivers Association	San Antonio WC
Belridge WSD	Keenan Farms	San Gabriel CWD
Byron Belhany ID	Kern Delta WD	San Gabriel Valley WC
Calaveras PUD	Kern Water Bank Authority	San Joaquin River Exch. Contr. Wtr Auth.
California American Water	Keyes CSD	San Jose WC
California Farm Water Coalition	Krieger & Stewart, Incorporated	San Juan WD
California Groundwater Assn.	La Canada ID	Santa Rosa Utilities Department
California Nevada AWWA	La Habra Heights CWD	Scotts Valley WD
California Special Districts Alliance	Lakeside Irrigation WD	Semitropic WSD
California Urban Water	Las Virgenes MWD	Shafter Wasco ID
Conservation Council	Lee & Ro	Solano County WA
California Water Association	Littlerock Creek ID	Somach, Simmons & Dunn
California Water Service Company	Llano MWC	South Coast WD
Central California ID	Luhdorff & Scalmanini	South San Joaquin ID
Chino Basin Watermaster	Main San Gabriel Basin Watermaster	SPEC Services
Chino Basin WCD	Meadowbrook WC	State Water Contractors
Citrus Heights WD	Mead & Hunt	Stockdale MWC
City of Beverly Hills	Mid Peninsula WD	Stockton East WD
City of Brentwood	Minasian, Spruance, Meith, et al	Suburban Water Systems
City of Clovis	Mission Highland MWC	Tea Pot Dome WD
City of Escondido	Mojave PUD	Tehachapi-Cummings CWD
City of Fresno	Mojave WA	Terrace WC
City of Hesperia	Montara Water & Sanitation District	Tetra Tech
City of Palo Alto	Monterey Regional Water	The Covello Group
City of Pomona	Pollution Control Agency	United WCD
City of Santa Cruz	Morongo Band of Mission Indians	Upper Santa Ana WRA
City of Santa Monica Utilities	MBK Engineers	Upper Santa Clara Valley JPA
City of Signal Hill	North Coast CWD	Valencia Heights Water Company
City of Vallejo Water Division	Nuevo Water Company	Valencia Water Company
Coastside CWD	Oakdale ID	Valley WC
Cordua ID	Oildale MWC	Vandenberg Village CSD
Crestline Village WD	Orange Vale Water Company	Vaughn Water Company, Inc.
Davids Engineering	Pacheco WD	Warring Water Service Inc.
Dee Jasper & Associates	Palo Alto Park MWC	West Valley WD
Delano Earlmart ID	Panoche Drainage District	West Yost Associates
Dan Steiner, Consulting Engineer	Panoche WD	Winzler & Kelley
Dublin San Ramon Services District	Patterson ID	Woolf Enterprises
Dudley Ridge WD	Pebble Beach CSD	Zone 7 WA

## California Water Awareness Campaign –

*Working Together to  
Encourage Wise Water Use*



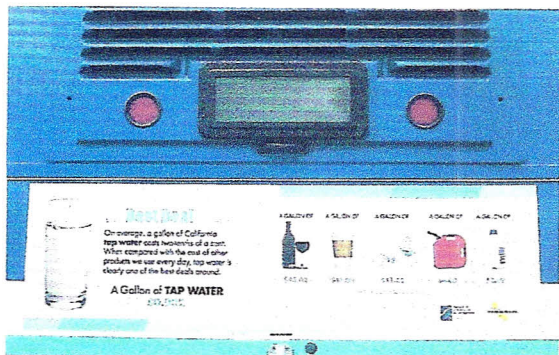
910 K Street, Suite 340  
Sacramento, California 95814

916-444-2584  
916-325-4849 fax

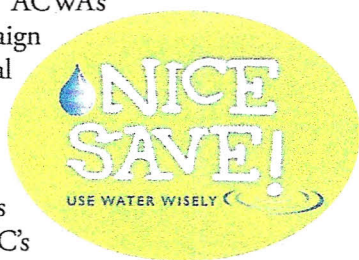
[cwac@wateraware.org](mailto:cwac@wateraware.org)  
[www.wateraware.org](http://www.wateraware.org)



## CWAC Joins With ACWA on Bus Ads



For the third year in a row, the California Water Awareness Campaign placed transit ads on buses during the month of September. Exterior bus ads were seen in Sacramento and the San Diego area for four to five weeks. This year, the CWAC and the Association of California Water Agencies jointly sponsored water conservation ads using ACWA's Value of Water campaign as seen in this photo. "We thought that using ACWA's latest education campaign pointing out the actual value of water compared to other services or commodities was the way to go this year," says Rob Whipple, CWAC's president. "With water costs rising, Californians need to know that water is actually a bargain and an important one, too". Hits to the CWAC Web site spiked during the running of the bus ads and, according to public surveys conducted by ACWA in the last year, consumers are more aware of the importance of water and are practicing many conservation techniques. The CWAC will continue to promote water conservation in concert with many other organizations in California in 2013, still using its "Nice Save!" campaign which can be viewed on our Web site.



## Education Program to Explore New Avenues in 2013

The CWAC continues to offer its many educational materials it has developed over the years, such as the series of five education books and two videos for both children and adults. Both items are very popular with teachers and will continue to be available. In 2013, the CWAC will be exploring an expanded education program working with other organizations which are members of the Department of Water Resources Education Committee. After a DWR Education Committee meeting this summer, water agencies will be able to use a new DWR Web site to pool information about education programs and coordinate projects. We will keep you posted!

## Contributor Survey to Come Soon

In late October/early November, the CWAC will be conducting a survey of water agencies to assess water agency needs in either school education or public education programs. The survey is an effort to keep the CWAC relevant in the immediate future and to respond to the needs of its contributors. The survey will also aid in identifying programs that are already being used so organizations and water agencies don't duplicate programs and can work together on desired outcomes. The survey will be heading to your agency online soon!

## CWAC Board of Directors

Association of California Water Agencies, *Jennifer Persike*  
 California Farm Water Coalition, *Mike Wade*  
 California Groundwater Association, *Mike Mortensson*  
 California Water Association, *Jack Hawks*  
 Elsinore Valley Municipal Water District, *Rob Whipple*  
 San Juan Water District, *Vicki Sacksteder*  
 Solano County Water Agency, *Andy Florendo*  
 United Water Conservation District, *Ken Breitag*  
 Consultant, *Maureen Erbeznik*  
 Executive Director, *Lynne Wichmann*

**ATTACHMENT H**  
**District Agriculture Water Oder Form**

## 2011 WATER APPLICATION

WESTSIDE @ 115.00 PER ACRE FOOT \_\_\_\_\_ A.F. ORDERED  
 \_\_\_\_\_ TOTAL PAYMENT ENCLOSED  
 \_\_\_\_\_ 1/2 PAYMENT ENCLOSED  
 AND  
 BALANCE DUE BY 6/26/2011

EASTSIDE @140.00 PER ACRE FOOT \_\_\_\_\_ A.F. ORDERED  
 \_\_\_\_\_ TOTAL PAYMENT ENCLOSED  
 \_\_\_\_\_ 1/2 PAYMENT ENCLOSED  
 AND  
 BALANCE DUE BY 6/26/2011

LESSEE

IN ACCORDANCE WITH CALIFORNIA WATER CODE SECTION 35423, THE DISTRICT SHALL NOT DELIVER WATER TO (1) PERSONS WHO VIOLATE THE DISTRICT RULES AND REGULATIONS, OR (2) PERSONS AGAINST WHOM THERE ARE DELINQUENT WATER OR OTHER CHARGES, AND/OR DELINQUENT ASSESSMENTS OF MORE THAN SIXTY DAYS. IN CASES WHERE PROPERTY IS BEING LEASED, THE DISTRICT SHALL NOT DELIVER WATER TO SAID PROPERTY IF ANY DELINQUENCIES EXIST AGAINST THE LANDOWNER.

**ATTACHMENT I**  
**Surface Water Analysis**



**DELAVALLE**  
Laboratory, Inc.  
Chemists and Consultants

# Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728  
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Friant Water Authority  
854 N Harvard Ave  
Lindsay CA 93247-1715

50

Material Submitted:

Lab No. 162508  
Sampled Date  
Sampled Time  
Submitted Date 9/1/2011  
Submitted by  
Reported Date 9/16/2011  
Location/Project  
Copy To  
Fax (559) 562-3496

	EC	Ca	Mg	Na	SAR	Adj SAR	Cl	CO <sub>3</sub> +HCO <sub>3</sub>	SO <sub>4</sub>	B	NO <sub>3</sub> -N	Fe	Mn	pH	L.I.	TDS
	dS/m	meq/L	meq/L	meq/L			meq/L	meq/L	meq/L	mg/L	mg/L	mg/L	mg/L	unit	Calc	mg/L
RL-->	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.01	0.01	1.0 to 14.0	-2.0 to 2.0	10.0
SM-->	2510 B	3120 B	3120 B	3120 B	Calc	Calc	SM 4500-Cl E	2320 B	SM 4500-SO4 E	3120 B	Lat. 10, 107, 05.1, A	3120 B	3120 B	4500H B	2330 B	2540 C
EPA-->							300		300		300					
Analysis Date:	9/1/2011	9/16/2011	9/16/2011	9/16/2011	9/7/2011	9/16/2011	9/16/2011	9/16/2011	9/16/2011	9/7/2011	9/1/2011	9/7/2011	9/7/2011	9/1/2011	9/16/2011	9/9/2011

001 MC 22.40 - 8/30/11 @ 10:30	0.02	0.09	0.03	0.1	0.3	<0.1	<0.1	0.1	<0.1	<0.01	<0.1	<0.01	<0.01	6.1	-4.0	20
002 MC 7.32 - 8/30/11 @ 11:35	0.02	0.08	0.02	0.1	0.3	<0.1	<0.1	0.1	<0.1	<0.01	<0.1	<0.01	<0.01	6.0	-4.1	20
003 FKC 34.92 - 8/30/11 @ 13:50	0.02	0.09	0.03	0.1	0.3	<0.1	<0.1	0.1	<0.1	<0.01	<0.1	<0.01	<0.01	6.0	-4.1	17
004 FKC 62.02 - 8/30/11 @ 14:40	0.02	0.10	0.03	0.1	0.3	<0.1	<0.1	0.1	<0.1	<0.01	<0.1	<0.01	<0.01	6.1	-4.0	33
005 FKC 71.37 - 8/30/11 @ 15:20	0.02	0.09	0.03	0.1	0.3	<0.1	<0.1	0.1	<0.1	<0.01	<0.1	<0.01	<0.01	6.2	-3.9	20
006 FKC 95.76 - 8/31/11 @ 07:40	0.02	0.09	0.03	0.1	0.3	<0.1	<0.1	0.1	<0.1	<0.01	<0.1	<0.01	<0.01	6.1	-4.0	50
007 FKC 122.05 - 8/31/11 @ 08:50	0.02	0.10	0.03	0.1	0.3	<0.1	<0.1	0.1	<0.1	<0.01	<0.1	<0.01	<0.01	6.1	-4.0	20
008 FKC 151.8 - 8/31/11 @ 10:00	0.02	0.09	0.03	0.1	0.3	<0.1	<0.1	0.1	<0.1	<0.01	<0.1	<0.01	<0.01	6.2	-3.9	30

## General Ag Levels

	Total Salts	Calcium	Magnesium	Sodium	SAR	Adjusted	Chloride	Bicarbonates	Sulfate	Boron	Nitrate	Iron	Manganese	pH	Langlier Index
Low	<0.50	<4.00	-	-	-	-	-	-	-	-	-	-	-	<6.5	<-0.5
Normal	0.60-1.50	5.00-10.00	1.1-5.0	<4.0	0.1-4.0	0.1-4.0	0.1-1.5	0.1-2.5	0.1-5.0	0.01-0.40	0.1-5.0	<0.20	<0.20	6.8-7.9	-0.3 - 0.5
High for Sensitive Crops	1.51-2.20	>10.00	>5.0	4.1-7.0	4.1-9.0	4.1-9.0	1.6-3.5	2.5-3.5	-	0.41-0.59	5.1-7.0	0.21-0.40	0.21-0.40	8.0-8.4	0.6-0.7
High for Tolerant Crops	>2.20	-	-	>7.0	>9.0	>9.0	>3.5	>3.5	-	>0.60	>7.0	>0.40*	>0.40*	>8.4	>0.9*

Many of the above parameters need specific adjustment for crops, uses, irrigation procedures, etc. Check report for specifics.

LI 0.4+ Problematic for drip system deposits. LI < -0.3 corrosive to plumbing

\*= High levels can cause plumbing deposits.

When sodium is greater than calcium (or high SAR), the water is considered sodic or "alkali".

Note: High & Low levels are based on consultant interpretation of the situation, including plant varieties, age, soil type, irrigation system, etc., when information is available.

Notes:

Black = Normal

Red = High

Green = Sl. Low

Orange = Sl. High

Blue = Low



**DELLAVALLE**  
Laboratory, Inc.  
Chemists and Consultants

# Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728

FAX (559) 268-8174 - (800) 228-9898 - (559) 233-6129

Friant Water Authority  
854 N Harvard Ave  
Lindsay CA 93247-1715

50

Material Submitted: Water

Lab No. 162508  
Sample Date 8/30/2011  
Sample Time  
Submitted Date 9/1/2011  
Submitted by  
Reported Date 9/16/2011  
Location/Project  
Copy To  
Fax (559) 562-3496

	pH	EC	EC	CO3 as CaCO3	HCO3 as CaCO3	Cl	PO4-P	PO4	SO4	NO3-N	NO3	TDS	B
	unit	µmhos/cm	dS/m	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MCL→		900-2200	0.90-2.2			250			250	10.2		500	
MDL→				0.9	3	0.03	0.01	0.03	0.03	0.01		10.0	0.01
RL→	1.0 to 14.0	10	0.01	1.0	5	0.1	0.01	0.03	0.2	0.1		10.0	0.01
SM→	4500H B	2510 B	2510 B	2320 B	2320 B	SM 4500-Cl E			SM 4500-SO4 E	LM 10,107.05.1 A		2540 C	3120 B
EPA→						300	300	300	300	300	Calc		
Analysis Date:	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/9/2011	9/7/2011

001 MC 22.40 - 8/30/11 @ 10:30	6.1	17.2	0.02	<1	7	0.5	<0.01	<0.1	0.6	<0.1	<0.45	20	<0.01
002 MC 7.32 - 8/30/11 @ 11:35	6.0	16.3	0.02	<1	6	0.5	<0.01	<0.1	0.6	<0.1	<0.45	20	<0.01
003 FKC 34.92 - 8/30/11 @ 13:50	6.0	17.3	0.02	<1	7	0.6	<0.01	<0.1	0.6	<0.1	<0.45	17	<0.01
004 FKC 62.02 - 8/30/11 @ 14:40	6.1	17.6	0.02	<1	7	0.6	<0.01	<0.1	0.6	<0.1	<0.45	33	<0.01
005 FKC 71.37 - 8/30/11 @ 15:20	6.2	23.4	0.02	<1	7	0.6	<0.01	<0.1	0.6	<0.1	<0.45	20	<0.01
006 FKC 95.76 - 8/31/11 @ 07:40	6.1	17.8	0.02	<1	7	0.6	<0.01	<0.1	0.6	<0.1	<0.45	50	<0.01
007 FKC 122.05 - 8/31/11 @ 08:50	6.1	18.1	0.02	<1	7	0.6	<0.01	<0.1	0.6	<0.1	<0.45	20	<0.01
008 FKC 151.8 - 8/31/11 @ 10:00	6.2	17.8	0.02	<1	7	0.6	<0.01	<0.1	0.6	<0.1	<0.45	30	<0.01

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04-05-2012

10:43:23



**DELLAVALLE**  
Laboratory, Inc.  
Chemists and Consultants

# Report of Water Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728  
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Friant Water Authority  
854 N Harvard Ave  
Lindsay CA 93247-1715

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Material Submitted:

Lab No. 162508  
Sampled Date 8/30/2011  
Sampled Time  
Submitted Date 9/1/2011  
Submitted by  
Reported Date 9/16/2011  
Location/Project  
Copy To  
Fax (559) 562-3496

	EC	Ca	Mg	Na	SAR	Adj SAR	Cl	CO <sub>3</sub> +HCO <sub>3</sub>	SO <sub>4</sub>	B	NO <sub>3</sub> -N	Fe	Mn	pH	L.I.	TDS
	dS/m	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	unit	Calc	mg/L
RL—>	0.01	0.1	0.1	1.0	0.1	0.1	0.1	6.0	0.2	0.01	0.1	0.01	0.01	1.0 to 14.0	-2.0 to 2.0	10.0
SM—>	2510 B	3120 B	3120 B	3120 B	Calc	Calc	SM 4500-Cl E	2320 B	SM 4500-SO <sub>4</sub> E	3120 B	Lat. 10.107.05.1.A	3120 B	3120 B	4500H B	2330 B	2540 C
EPA—>							300		300		300					
Analysis Date:	9/1/2011	9/7/2011	9/7/2011	9/7/2011	9/7/2011	9/16/2011	9/1/2011	9/16/2011	9/1/2011	9/7/2011	9/1/2011	9/7/2011	9/7/2011	9/1/2011	9/16/2011	
001 MC 22.40 - 8/30/11 @ 10:30	0.02	1.8	0.3	1	0.3	<0.1	0.5	7	0.6	<0.01	<0.1	<0.01	<0.01	6.1	-4.0	20
002 MC 7.32 - 8/30/11 @ 11:35	0.02	1.7	0.3	1	0.3	<0.1	0.5	6	0.6	<0.01	<0.1	<0.01	<0.01	6.0	-4.1	20
003 FKC 34.92 - 8/30/11 @ 13:50	0.02	1.8	0.3	1	0.3	<0.1	0.6	7	0.6	<0.01	<0.1	<0.01	<0.01	6.0	-4.1	17
004 FKC 62.02 - 8/30/11 @ 14:40	0.02	1.9	0.3	1	0.3	<0.1	0.6	7	0.6	<0.01	<0.1	<0.01	<0.01	6.1	-4.0	33
005 FKC 71.37 - 8/30/11 @ 15:20	0.02	1.8	0.3	1	0.3	<0.1	0.6	7	0.6	<0.01	<0.1	<0.01	<0.01	6.2	-3.9	20
006 FKC 95.76 - 8/31/11 @ 07:40	0.02	1.9	0.3	1	0.3	<0.1	0.6	7	0.6	<0.01	<0.1	<0.01	<0.01	6.1	-4.0	50
007 FKC 122.05 - 8/31/11 @ 08:50	0.02	2.0	0.3	1	0.3	<0.1	0.6	7	0.6	<0.01	<0.1	<0.01	<0.01	6.1	-4.0	20
008 FKC 151.8 - 8/31/11 @ 10:00	0.02	1.8	0.3	1	0.3	<0.1	0.6	7	0.6	<0.01	<0.1	<0.01	<0.01	6.2	-3.9	30

FWA Lindsay

5595623496

BEFORE THE BOARD OF DIRECTORS  
OF THE  
TEA POT DOME WATER DISTRICT  
CITY OF PORTERVILLE, COUNTY OF TULARE  
STATE OF CALIFORNIA

RESOLUTION ADOPTING THE ATTACHED )  
FIVE YEAR WATER MANAGEMENT PLAN ) RESOLUTION NO. 13-02  
UPDATE )

AT THE TEA POT DOME WATER DISTRICT BOARD OF DIRECTORS  
MEETING HELD ON FEBRUARY 6, 2013, THE BOARD APPROVED THE 2011  
FIVE YEAR WATER MANAGEMENT PLAN UPDATE THAT WAS SUBMITTED TO  
THE BUREAU OF RECLAMATION, MID-PACIFIC REGIONAL OFFICE, AND  
WHICH WAS ACKNOWLEDGED AND APPROVED BY LETTER DATED  
JANUARY 4, 2013 AND SIGNED BY RICHARD J. WOODLEY, REGIONAL  
RESOURCES MANAGER, U.S.B.R.

DIRECTOR Job OFFERED THE ABOVE RESOLUTION AND MOVED  
FOR ITS ADOPTION. THE MOTION WAS SECONDED BY DIRECTOR Laux  
AND CARRIED BY THE FOLLOWING VOTE.

AYES: Director Job, Laux & President Sherwood

NOES: None

ABSENT: Director Galkbraith



Dave Sherwood  
President



Catherine Fabricius  
Secretary

Dated: February 6, 2013